U.S. Department of the Interior
Bureau of Land Management

in cooperation with the
U.S. Department of the Interior
Minerals Management Service

August 1998

Northeast National Petroleum Reserve-Alaska

Final Integrated Activity Plan/ Environmental Impact Statement

VOLUME 2

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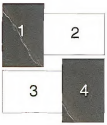

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Northeast National Petroleum Reserve-Alaska

Final Integrated Activity Plan/ Environmental Impact Statement

Volume II

Prepared by

U.S. Department of the Interior
Bureau of Land Management

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SECTION V

REVIEW AND ANALYSIS OF COMMENTS RECEIVED

V. REVIEW AND ANALYSIS OF COMMENTS RECEIVED

A. Summary of Comments on the Draft IAP/EIS: We received approximately 7,000 written comment letters on the draft IAP/EIS during the public comment period of December 12, 1997 through March 12, 1998. Letters came from every state in the union and from a wide array of citizens, from grade-school children to a woman in her 90s. Approximately 500 comments arrived via e-mail or in response to comment forms we provided on the internet. We held nine public meetings/subsistence hearings in January 1998 at which 197 people testified. The meetings were held at Anaktuvuk Pass, Anchorage, Atqasuk, Barrow, Fairbanks, Nuiqsut, and Wainwright, Alaska, and in Washington, D.C. and San Francisco, California.

Many of the 7,000 written comments were identical statements prompted by mail-in campaigns by environmental or pro-development organizations. We received preprinted postcard returns from members and supporters of the Alaska Center for the Environment and Sierra Club (350), National Audubon Society (275), and the Wilderness Society and Alaska Wilderness League (2,950). A campaign organized by the Natural Resources Defense Council prompted 900 form letters, and a newspaper advertisement in the *New York Times* with a message to clip and send to us that opposed development yielded another 80 responses. We also received 300 messages through about a dozen form letters generated by industry and labor groups. Other mail-in campaigns produced smaller numbers of identical comments.

We assigned tracking numbers to the comment letters in roughly the order in which they were received. We avoided assigning tracking numbers to more than one of any set of identical comments. Thus, only 2,043 written comments are listed in Appendix J, Table J-1. Table J-2 in the same appendix lists the 197 people who spoke at the public meetings.

All comment letters and the hearing transcripts were reviewed by a team of BLM and MMS specialists. These staff members identified comments which required a response. Comments require a response if they "are substantive and relate to inadequacies or inaccuracies in the analysis or methodologies used; identify new impacts or recommend reasonable new alternatives or mitigation measures; or involve substantive disagreements on interpretations of significance." (BLM NEPA Handbook) We have responded in Sec. V.B. and have revised the IAP/EIS to address many of the concerns and incorporate additional information provided in the public's comments.

B. Comments and Responses: We have not reproduced all the thousands of comment letters we received. The written and oral testimony reproduced here, however, includes or is a representative summary of all the substantive comments expressed by the public. We have numbered specific comments meriting response in the letters and excerpts from the public meeting transcripts. The responses to the comments are placed at the end of each letter or oral testimony excerpt. We have also printed other written and oral comments for which no response is required. These comments are included to provide readers with a sense of the range of public sentiment on the future management of the planning area.

Below is a list of the comments we have reprinted and the number assigned to each. Some comment responses refer readers to other responses. Comments and responses are reprinted in numerical order, with public meeting comments following the written comments.

Alaska Elected Officials

U.S. Senator Ted Stevens (1666)
U.S. Representative Don Young (1663)
Alaska State Legislature (1659, 1665, 1674)
Alaska Senator Dave Donley (277)
Alaska Speaker of the House Gail Phillips (1335)

Federal Agencies

Alaska Resource Advisory Council, Bureau of Land Management (1839)
U.S. Arctic Research Commission (1313)
U.S. Army Corps of Engineers (1334)
U.S. Department of Commerce (National Marine Fisheries Service and National Geodetic Survey) (1908)
U.S. Department of Energy (1657)
U.S. Environmental Protection Agency (1652)
U.S. Fish & Wildlife Service (1752)
U.S. Geological Survey (1869)

State and Local Governments and Tribal Organizations
State of Alaska (1660)
North Slope Borough (1669)
City of Nuiqsut (1246)
City of Wainwright (955)
Inupiat Community of the Arctic Slope (39)
Native Village of Barrow (851)
Association of Village Council Presidents (1852)
City and Borough of Sitka (1779)
City of Valdez (1000)

Alaska Native Claims Settlement Act Corporations
Arctic Slope Regional Corporation (106 and 1751)
Kuukpik Corporation (1670)
Afognak Native Corporation (1988)
Chugach Alaska Corporation (1987)
Koniag, Incorporated (1155)
Sitnasuak Native Corporation (1247)

Oil and Gas Industry and Representative Supporting Correspondence
Alaska Oil and Gas Association (1656)
Anardarko Petroleum Corporation (1333)
ARCO Alaska (1662)
BP Exploration (1658)
Pacific Legal Foundation (1667)

3 form letters (266, 267, 268)
ARCO CAP Report (March 1998) (attachment to 1750)

Conservation Groups and Representative Supporting Correspondence
Alaska Community Action on Toxics (1951)
Alaska Waveriders (1314)
American Bird Conservancy (1661)
American Rivers (603)
Endangered Species Coalition (1668)
Harvey Broome Group, Sierra Club (71)
National Audubon Society, Alaska State Office (1664)
Northern Alaska Environmental Center (1853)
Oilwatch Alaska (1900)
Ornithological Council (1696)
Pacific Flyway Council (1450)
Wilderness Society, et al. (1851)

Alaska Center for the Environment/Sierra Club postcard (55)
Audubon Society postcard (12)
Natural Resources Defense Council form letter (2043)
New York Times advertisement clipping (2042)
Northern Alaska Environmental Center, et al. (1675)
Wilderness Society/Alaska Wilderness League postcard (263)

Other Written Comments
Alaska Management Consultants (2001)
Alaska Miners Association, Inc. (1686)
America Copper & Nickel Company Inc. (1789)
Arctic Slope Native Association, Limited (1671)
Robert Bell and Associates (13)
Dave Bordenkircher (26)
Gerald R. Brookman (313)
Tom J. Cade (1194)
Nancy DeWitt (1850)
Oscar Frank, Jr. (23)
Robert Franz (206)
S. Craig Gerlach (1672)
Jonathan Green (1926)
Janeen Herr (1799)
Karen Jettmar (311)
John Koranda (1164)
Doreen Lampe (1398)
Pamela A. Miller (1854)
Nick [no full name provided] (329)
Pacific Coast Federation of Fisherman's Association, Inc. (1898)
Raptor Research Foundation, Inc. (1899)
Rick Rogers (325)
Helena and Jose Bretas Rueter (597)
Paul C. Rusanowski (907)
Charles R. Statum (1187)
Rachel Thomas (713)
David van den Berg (1673)
Clayton M. White 1982)
Richard Wood (1411)

Public Meeting Testimony
Anaktuvuk Pass
- Mike Morry (AP4)
- Lela Ahgook (AP7)

Anchorage
- Pam Miller (AN14)
- Marilyn Houser (AN31)

Atqasuk
- Mayor Ben Nageak (AT1)
- Bartz Englishoe (AT2)
- Luke Kagak (AT3)

Barrow
- Jana Harcharek (BA3)
- Morgan Solomon (BA5)
- Bill Tegoseak (BA6)
- Mayor Jim Vorderstrasse (BA10)

Fairbanks
- Dave Klein (FA4)
- Jim Plaquet (FA9)
- Fred Heflinger (FA19)
- Dave Duhart (FA20)
- Jon Miller (FA24)
- Roger Siglin (FA27)

Nuiqsut
- Thomas Napageak, President of the Native Village of Nuiqsut (NQ2)

Ruth Nukapigak (NQ4)
Bernice Kaigelak (NQ5)
Mayor Leonard Lampe (NQ6)
San Francisco
Bill Gomez (SF6)
Fred Berdall (SF13)
Norbert Riedy (SF15)
Ken Freeman (SF18)
Dennis Kelso (SF35)
Wainwright
Terry Tagarook (WA6)
Winfred Ahvakana (WA9)
Washington, D.C.
William Sladen (DC6)
Martin Thomas (DC8)
Michael Carroll (DC9)
Jeremy Scheaffer (DC11)
Paul Fuhs (DC22)

0012

Dear NPR-A Planning Team:

I am writing regarding the Integrated Activity Plan/Environmental Impact Statement (DEIS) for the northeastern corner of the National Petroleum Reserve- Alaska (NPR-A). The proposed alternatives in the DEIS would not adequately protect the significant wildlife values found in the planning area. I recommend the following actions based on Alternative B:

- No leasing in the areas defined in Alternative B.
- Prohibit roads and pipelines in the no lease areas defined in Alternative B.
- Seek permanent protection, through legislative action, for the Teshekpuk Lake Special Area and Colville River Special Area.
- Conduct a new analysis to more adequately address the cumulative effects of leasing on fish and wildlife populations and habitats through the planning area and all of NPR-A.

Sincerely,

Name _____

Address _____

_____

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0013

F. Robert
bell & assoc.
801 West Firewood Lane • Anchorage, Alaska 99503-1801
(907) 274-5257 • FAX (907) 272-7531

97 DEC 17 AM 10:16
ANCHORAGE AK 99513

Dec. 16, 1997

Mr. Tom Allen
NPR-A Planning Team
Bureau of Land Mgmt.
Alaska State Office (930)
222 W. 7th Ave.
Anchorage, AK 99513-7599

Dear Mr. Allen,

My company, F. Robert Bell & Associates, were the engineers and surveyors for Husky Oil on the NPR-A project from 1975-1985. In the course of that project, we collected considerable data on the Reserve to include soils, survey control, and arctic design innovations such as ice aggregate roads. I personally supervised the work on NPR-A and spent over 500 days on site. My employees logged several thousand house on site.

I have reviewed your summary report and have the following comments:

Soils: Your report doesn't take into account the soil conditions in NPR-A. During the Husky Oil program from 1975 to 1985 we sampled soil throughout the Reserve. The soil conditions we found were: uniform graded pea gravel on the coast, ice rich organic permafrost and sand in the interior, and well graded gravels in the rivers.

Development impact is driven by soil conditions. Development in good soil conditions results in less environmental impact.

Special Designations: If the rivers and camp sites are designated wild and scenic or require 1/2 to 1 mile clear zones, then how do you access Prudhoe Bay process facilities? It appears you would require longer pipelines to avoid these assets, thereby causing more environmental impact. (Pages 34 and 53) 001

Water Sources: There are very few lakes on NPR-A that are over 7 feet deep. Winter water becomes a very serious consideration when developing a drilling or production site. Why not allow water to be withdrawn from any lake or river if it can be shown that no significant long-term impact will occur. (Page 52) 002

Overland Moves: I would assume wheeled vehicles would be allowed on ice roads. The low pressure and track restriction would only apply to off-road travel. (Page 52) 003

Protective Measures: I would suggest the Subsistence Advisory Panel represent all organizations so the oil and gas leases will only have one entity to deal with. This will avoid conflicting requirements. 004

I hope these comments are helpful. We have maintained our records on NPR-A to include soils information, cat trail maps, site designs, etc. If it would be helpful, we could make these records available.

Thank you for the excellent report on the Reserve.

Cordially,

F. ROBERT BELL & ASSOCIATES

F. Robert Bell, P.E., L.S.
Principal

FRB/bls
e:/frb/corres/husky

0013-001
The most likely route for a pipeline from the NPR-A to the Prudhoe Bay oil field complex is via the existing pipeline in the Kuparuk field by way of the proposed Alpine field pipeline. The Alpine pipeline will cross the Colville River at a point well below the parts of the river considered for Wild and Scenic River designation or subject to setbacks. A pipeline in the area which, under some alternatives, would be subject to setbacks and/or Wild and Scenic River consideration could, like the proposed Alpine pipeline crossing, be burrowed under the river. As a consequence, we do not anticipate that these restrictions would necessitate a longer pipeline with greater environmental impacts.

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0013-002
The planning area contains numerous deep-lake basins. Bendock (1984) surveyed >60 of these lakes and found that >40 exceeded 10 ft in depth. The BLM GIS database for the Northern District Office indicates that there are 2, 927 lakes between 5.25 and 13 ft deep covering a total area of 404,681 acres in the Northeast Planning Area.

The 7-ft water depth standard for water withdrawals is based on the professional experience and technical position of the State of Alaska, Department of Fish and Game that 7 ft of water is necessary to protect overwintering fish populations and water quality. The 7-ft standard is consistent with current State of Alaska permitting stipulations for oil and gas operations on the North Slope. Preferred Alternative Stipulation 20 allows the withdrawal of water from any non fish-bearing lake.

0013-003
The commenter's understanding is correct.

0013-004
The Subsistence Advisory Panel is to serve as an important voice for the subsistence concerns of North Slope residents. It, along with the NSB and affected communities, are to play important roles in advising oil and gas lessees and BLM on measures to avoid conflict with subsistence activities and resources (See Preferred Alternative Stipulations 61 and 62). While the panel may wish to hear from and speak to other agencies with authority on North Slope developments prior to offering their advice, we do not want to dilute the local residents' voice by making State and Federal agencies with regulatory authority members of the panel.

0023

NPR-A Planning Team
Bureau of Land Management
Alaska State Office (930)
222 W. 7th. Avenue
Anchorage, AK 99513-7599

December 17, 1997

Dear Sir:

I think the Subsistence Advisory Board is a good idea for the Alternatives. I offer my personal view on NPR-A: the Alternative I like is 'A.' Its No Action is a calm one that waits until the country is in need of oil and gas.

In any case involvement of a Subsistence Advisory Board will assist BLM, and other agencies go forward with input from the subsistence users of the land.

I didn't notice, but what happens next year; if the federal government takes over management of fisheries on public lands? 001

Thank-you for the opportunity to comment. Please remember that subsistence will still be around, after any development occurs on this land.

Cordially,
Oscar Frank Jr.
Oscar Frank Jr.

0023-001
As BLM envisions this plan, management of fisheries in Federal waters would be limited to subsistence uses and would have no practical effect on future management of the NPR-A. The existing Federal Subsistence Board would regulate subsistence fisheries. The Board would implement the harvest of fish and wildlife on public lands in Alaska through Federal Subsistence Management Regulations. Subsistence users would be required to have a State fishing license and any special permits required by Federal regulations.

500 Paragon Mills Rd. # G-6
Nashville, Tennessee 37211
December 30, 1997

0026

Bruce Babbitt
The Secretary of the Interior
U. S. Department of the Interior
1849 C St., NW
Washington, D. C. 20240

Dear Secretary Babbitt:

I am writing regarding the Draft Integrated Activity Plan/Environmental Impact Statement (DEIS) for the northeastern corner of the National Petroleum Reserve-Alaska (NPR-A). I have reviewed this document and its five alternatives.

Because there is no compelling reason why leasing must be done now, Alternative A is the best alternative. If parts of the area are leased, Alternative B should be modified to reflect conservation concerns for the area. Alternative B prohibits leasing in the most critical wildlife and fish habitats. Alternative B must be modified to have permanent protection for the Teshekpuk Lake and Colville River Special Areas. To permanently protect these habitat areas, Democrats in Congress should designate these areas off limits to destructive development. If this area is not needed so much by the federal government, I would recommend giving control of this area to a private wildlife conservation group from Alaska or the lower forty-eight states. 001

This area along the North Slope on the Arctic includes fish and wildlife habitat. The Teshekpuk Lake Special Area has habitat for calving caribou, and habitat for ducks, geese and swans. The Colile River has habitat for moose, brown bears, wolves, wolverines, and nesting song birds. The bluffs of the River has habitat for the Arctic Peregrine Falcon.

This is a summary of my recommendations concerning the NPR-A DEIS:

1. No leasing in the areas defined in Alternative B 002
2. Prohibit roads and pipelines in the no lease areas defined in Alternative B. 003
3. Seek permanent protection, in Congress, for the Teshekpuk Lake Special Area and the Colville River Special Area 004

Thank you for your attention to my request concerning the alternatives for the planning area in the National Petroleum Reserve Alaska.

Sincerely,
Dave Bordenkircher
Dave Bordenkircher

0026-001
The commenter is correct in suggesting that permanent protection requires Congressional action. So too would placing management for Federal lands in the hands of a private group. For further discussion on permanent protection requiring legislation, see Response 1851-058.

0026-002
Please refer to Section II.C.1. for a description of the preferred alternative.

0026-003
Please refer to Section II.C.1. for a description of the preferred alternative. See also Preferred Alternative Stipulation 48, which restricts permanent roads in the planning area and connection to the existing road network east of NPR-A.

0026-004
Please see Response 1851-058.

0039

Arnold Brower Jr.
P.O. Box 402
BArrow, , Ak 99723
abrower@co.north-slope.ak.us
Inupiat Community of the Arctic Slope

In all alternatives, no designation of wild, scenic, or recreation river under the Wild and Scenic Rivers Act. Inupiat Community of the Arctic Slope, IRA (a regional Tribal government) opposes any further infringement of land classification that are beyond the regulatory authority of the ICAS. Therefore, any designation must be in conformance with wilidlife regulatory authority of the ICAS for co-management first be be established between BLM and ICAS. At this point, new conflicts are eminent, in the same way as their are conflicts with Inupiat subsistence hunters in the Gates of the Arctic, and ANWR. This is true in all major rivers int he Arctic. 001

Fishes winter and are in the rivers nearly throughout the year. Colville is the primary river for Nuiqsut's subsistence fishing for nutritional needs, for large broad white fish, least cisco, grayling, and other fishes. The Utukok River is the alternate subsistence fishing depot for Wainwright and Pt Lay. Residents of Wainwright have fish camps as far as Eskimo hill in approximately 150 miles south of Wainwright. Residents of Nuiqsut harvesting caribou and moose set fish nets to catch their daily needs and summer supply of fish while camped to harvest their caribou and moose.

A clash of recreationers and subsistence hunters will no doubt interfer with each other in the river. From past experiences, many hunters have lost their chances to harvest caribou and moose by non-subsistence hunman interference who approach the hunters by plane, recreational boaters, an d the like. Some hunters do not have luxurous cash available and are trying to supplement their nutritioanl needs with subsistence hunting for their families. 002

Instead, in the Colville River, a special designation must be applied that Inupiat subsistence hunters shall have the five mile buffer for harvesting those games within the buffer durign the summer months. This will elimnate the competition between the recreation sporters and people trying to thrive for a living by subsistence hunting for their families. It must have a priority in any management plan in the Arctic Slope region. This application must be implemented as a primary tool in the co-management contracting with ICAS as a matter of rule.

Although, a couple Alpine footprint size developments may be allowable north fo the Teshekpuk Lake, it is imperative that a Prudhoe style development must not occur! We will support a limited development plan that can be supported due to nesting areas of endanagerd waterfowl species, and avoid displacement of Caribou from calving areas proportionately. These proportions may be limited to perhaps 20% of possible developable areas, only if they are found to be so! Impact funds must be assured! Impact funds to replenish, enhance, and accomodate biologists to enhance, study and document the survivability of impacted species must be tried on a small scale first! 003

However, these activites cannot be tried on exisiting subsistence hunting areas by Nuigsut, Barrow, Atgasuk and Wainwright.

It is unfortunate, that BLM is not forward to favor an alternative selection. Of course, we recognize that BLM needs public input first, but a public input on a preferred alternative will better represent the true intent of the DEIS. Although, it is good to get insight of public preception on the rest of the land. However, the implication of the options being viewed by BLM on non-impacted lands by development needs to be addressed and accepted if possible by local governing authorities! The NSB has Planning, Zoning, Platting, Permitting, Development ordinances enacted in law by the local residents, asd well as the Industry that comes into the Arctic Slope must comply with these regulations. These lands management regulations are generally accepted by the Native Village of Barrow and ICAS and other Native entities within the ICAS and NSB boundaries. 004

These exisitng governing land regulations and laws qualify ICAS to co-manage all areas of lands within the Arctic Slope, NPRA inclusive. In light of no eminent wars, and danger from our neighbors, the land must be given to domestic land managers within the regions involved or to be impacted. We do not withdraw the Federal governments right to royalty to federal lands. However, local ancestral lands should be reconveyed back to the tribes which sacrificed these properties in the name of Military and Defense purposes. 005

Native Village of Barrow requests the BLM to reconvey all federally held land properties in Barrow back to the Tribal authorities for our economic benefit. These properties include the old BIA School, the Hospital property, and other small lots within Barrow held in title by BIA. The Tribes is now contracting for the operation of the Hospital and a deed will enhance the management of the facilities either for new development and expansions of services for the community. The Weather Bureau property is no longer necessary as that can be PL-93-638 contracted to NVB and the technological equipment no longer requires such a large tract of land be set aside for the Weather Bureau. 006

We, unquestionably, support the land conveyances be resolved in favor of the local ANSCA Corporations: ASRC, Kuukpik, UIC, and Atqasuk. The unresolved lands issue will be mailed as: CHRONOLOGY OF NATIVE VILLAGE OF BARROW LANDS. This illustrates and delineates that the local ANSCA UIC corporation is within the proposed Reservation of the Native Village of Barrow which was

deemed unable to sustain the livelihood of the Native Village of Barrow economically or nutritionally. Therefore, we support UIC further selections outside of their current existing selections.

ICAS, IRA regional Tribal government will definitely impacted by the developments whether socially, culturally, in subsistence hunting, and economically in some way. An immediate offer by BLM will enhance the co-management of the NPRA lands and its wildlife resources through a PL93-638 contract with ICAS. 007

All existing and potential sand and gravel pit sites must be conveyed to ICAS for monitoring of controlled development within the proposed development areas. If no there are no existing sand and gravel sites, BLM shall fund a contract to do a feasibility study for mining sand and gravel for development. This mechanism shall be in place to provide maximum and concerted effort for the industry to provide economic ventures for local ANSCA businesses in the Arctic Slope. 008

All water rights to be used for Oil and Gas development, or other hard mineral development shall be conveyed to ICAS for the impact created inadverdently to the local government which has authority to govern wildlife resources within the ipacted area. This will create impact funds for monitoring, and additional burden created by the encroachment of the industry to the critical subsistence use areas of the Inupiat Community of the Arctic Slope residents. 009

It is OK to release my name and street address to the public with these comments.

Entered on: 1/8/98

0039-001
A review of Wild and Scenic River eligibility and suitability is required by the Wild and Scenic Rivers Act in conjunction with agency land use planning efforts, 16 U.S.C. § 1276(d). So we have incorporated a review and recommendation process in this IAP/EIS to satisfy that statutory requirement.

We are unaware of any regulatory authority of the ICAS which is applicable under the Wild and Scenic Rivers Act.

0039-002
The potential for the increase of recreational use on the Colville River and the possibility of conflicts with subsistence users has been addressed [C.13.a(1);D.13.a(1);E.13.a(1); F.13.a(1)]. The 5-mi buffer for subsistence would require a change in the Federal subsistence regulations under the authority of the Federal Subsistence Board and is outside the scope of this IAP/EIS. The BLM does not have the authority to make such a change to Federal subsistence regulations. The commenter could submit a proposal to the Federal Subsistence Board that would create such a buffer.

0039-003
Please see Response 1669-017.

0039-004
Please see Response 1851-054.

It is BLM's policy to consider local planning and zoning in preparing land management plans for Federal lands. As has been demonstrated by the involvement of the North Slope Borough in this process, we are working closely with local government.

0039-005
The BLM is guided by Federal law in the conveyance of lands entrusted to its management. There are no "existing governing land regulations and laws [that] qualify ICAS to co-manage all areas of lands within the Arctic Slope, NPR-A inclusive." BLM is in the process of conveying lands to Kuukpik Corporation (and subsurface to ASRC) in accordance with ANCSA. More sweeping land conveyances can only be authorized by Congress.

0039-006
Barrow is outside the planning area; thus, the requested actions are not within the scope of this IAP/EIS.

0039-007
Please see Response 1669-017. A consideration of contracting procedures to be utilized by BLM is outside the scope of this EIS.

0039-008
Sand and gravel in the NPR-A are not available for conveyance to ICAS. Disposition of sand and gravel resources is governed by the Mineral Materials Act, 30 U.S.C. §§ 601-615.

0039-009
Water rights in the NPR-A are not available for conveyance to ICAS. Water appropriations for various development activities generally are processed through existing state authorizations.

0055

NATIONAL PETROLEUM RESERVE-ALASKA (NPR-A)

Dear Mr. Tarland:

I am concerned that internationally significant fish and wildlife habitats, wilderness, and wild rivers are threatened by current oil leasing proposals by BLM. There is no compelling national energy need to lease NPR-A at this time. The Draft Environmental Impact Statement (DEIS) for the NPR-A is inadequate for the following reasons:

- ☐ A new conservation alternative is needed because none of the DEIS alternatives adequately protects fish and wildlife habitat, rivers, or wildlands.
- ☐ Permanent protection is necessary for the Teshekpuk Lake Special Area and the Colville River Special Area prior to new leasing elsewhere in NPR-A. These Special Areas should be forever off-limits to roads, pipelines and industrial activity. Recommend "Wild" river designation for the Colville River.
- ☐ Cumulative impact assessment of development across the North Slope needs to be finalized before any leasing is granted.
- ☐ The DEIS underestimates environmental impacts to fish and wildlife habitat from oil exploration and development.
- ☐ Other comments.

Sincerely,

Name Address

----------Please detach here and mail today----------

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0071

From: Kenneth S Warren <kswarren@kornet.org>
To: ilmakcso.ilmakdal(jducker)
Date: Sun, Jan 18, 1998 8:24 am
Subject: OIL DRILLING IN THE RESERVE

Dear Sirs:
The Harvey Broome Group (HBG) of the Sierra Club has a membership of about a thousand who reside in east Tennessee. In writing to you I am speaking for the HBG concerning the destruction of some of Alaska's last unspoiled wilderness.

The BLM draft environmental impact statement for the Arctic Reserve gives litle or no consideration to the way of life of the Alaskan natives, nor to the welfare of native wildlife, nor the ultimate use of the oil. 001

With these issues in mind, we urge that you recommend to Congress that at the very minimum permanent wilderness protection be granted to the Colville River and Teshekpuk Lake Special Areas. These areas should then be transferred to the U.S.Fish & Wildlife Service. 002

The entire 4.6 million-acre planning area really qualifies for wilderness designation. The Alaskan Reserve must be conserved for the American people in a time of real need. At present, US oil companies are shipping millions of barrels of oil to Asia. Americans are demanding status-symbol vehicles with ever greater horsepower. This is not a time of pressing national need.
Please prevent the Arctic wilderness from becoming another polluted oilfield.

Sincerely yours,

Ken Warren
Corresponding Secretary
Harvey Broome Group
SIERRA CLUB

CC: ilmakcso.smtp("sarag@mosquitonet.com")

0071-001
The way of life of the Inupiat, Alaskan Natives who inhabit Alaska's North Slope, is described in terms of subsistence-harvest activities and patterns, population characteristics, social characteristics of the communities, social organizations, and cultural values in Sections III.C.3 and 4 of this EIS. The cultural resources and history of the Inupiat are described in Sections III.C.2 and III.C.1; this includes a description North Slope Borough employment. The potential effects of oil and gas development on the subsistence activities and patterns, social features, culture, and economics of the people who inhabit the North Slope are analyzed in Sections IV.B, C, D, E, F, and H for Alternatives A, B, C, D, and E and for the Preferred Alternative, respectively, of the EIS. The EIS also includes an appendix prepared by the North Slope Borough entitled *The Inupiat People's History and Future with regard to the National Petroleum Reserve-Alaska (NPR-A) A 1997 perspective from the North Slope Borough*.

The welfare of the native wildlife is considered in the areal deferral alternatives and stipulations described in the EIS. The areal deferral alternatives provide protection for the wildlife by making specific areas in the planning area unavailable for leasing; see Table II.D.1. Under Alternative A, none of the planning area would be available for leasing. Under Alternative B, certain areas that are important fish and wildlife habitat would not be available for leasing. Alternatives C and D would make more fish and wildlife habitat available for leasing. Under Alternative E, all the planning area would be available for oil and gas leasing. The fish and wildlife habitat areas that would be unavailable for leasing or provide facility-siting restrictions under the Preferred Alternative include most of the Teshekpuk Lake watershed (Fig. II.B.1); goose-molting area (Fig. II.B.2); spectacled eider breeding range (Fig. II.B.3); caribou habitat (Fig. II.B.4); fish habitat (Fig. II.B.5); and raptor, passerine, and moose habitat (Fig. II.B.6).

The stipulations in Section II.C.7 provide measures to reduce the effects of activities associated with petroleum exploration and development and help minimize the potential impacts on wildlife. The stipulations include measures to ensure:

- proper handling and disposal of solid and liquid wastes and hazardous materials;
- cleanup of solid waste and liquid wastes and hazardous materials spills;
- minimal impact of ice roads, overland moves, and seismic activities on the tundra, lakes, and streams to protect fish and wildlife habitat;
- facilities are not located in buffer zones around goose molting lakes and fish bearing lakes and streams;
- some activities, such as exploration drilling and seismic activities, are conducted in the winter when most of the migratory species have left;
- consultation with local communities prior to exploration and development plan approval, especially along critical river corridors; and
- protection of cultural resources.

Also, inventorying and monitoring would be conducted to determine the status of the various fish and wildlife resources in the area, and effectiveness of stipulations designed to conserve these resources.

Any oil that might be produced from the Northeast NPR-A Planning Area would be included in the Nation's supply of domestically produced oil, part of the National Energy Strategy as proposed by the Department of Energy (Sec. I.A).

0071-002
Please see Response 1851-058 and Section II.G.

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arctic slope regional corp.

0106

January 14, 1998

NPR-A IAP/EIS Planning Team Members
Bureau of Land Management
Alaska State Office
222 West 7th Avenue, No. 13
Anchorage, Alaska 99513

Re: Arctic Slope Regional Corporation's Preliminary Comments on the Northeast National Petroleum Reserve-Alaska Draft Integrated Activity Plan/Environmental Impact Statement (IAP/EIS), December 1997

Dear Planning Team Member:

The purpose of this letter is to provide the Bureau of Land Management ("BLM") with Arctic Slope Regional Corporation's ("ASRC") preliminary views and comments on the December 1997 Draft IAP/EIS for an oil and gas leasing program within the Northeast portion of the National Petroleum Reserve-Alaska ("NPR-A"). This letter supplements ASRC's April 18, 1997 submission to BLM of Scoping Comments for the IAP/EIS planning process for NPR-A(19 pages with enclosed tables and maps). This letter also supplements a long series of meetings and correspondence about North Slope and NPR-A land exchanges, land management and policy in which ASRC has been engaged in since March 1994 with the Secretary of the Interior, other Departmental officials in Washington, D.C. and Alaska, and representatives of BLM's Alaska State Office.

On behalf of ASRC's 7,300 shareholders, I regret that I must express our profound disappointment with the NPR-A Draft IAP/EIS. This hastily prepared document is incomplete and unresponsive. The NPR-A Draft EIS is not responsive to many of the most important views and recommendations set forth by ASRC by the North Slope Borough (NSB), by our Village Corporations and by other North Slope institutions representating the Inupiat people and other residents. 001

The Draft EIS ignores the interests of, and the repeated concerns, views and recommendations of the Inupiat people. Yet, these are the very people who live within NPR-A, and who depend on the resources and lands of this area for their subsistence and cultural needs. These are also the people who will bear all of the burdens of poor planning and an incremental policy of piecemeal oil and gas leasing, exploration and development within the NPR-A.

BLM received much useful, well-informed recommendations last April in the Scoping process for the design of the NPR-A Draft IAP/EIS. These recommendations came from ASRC, the NSB and other North Slope institutions and representatives of the Inupiat people. Unfortunately, these Scoping recommendations were not followed. Instead, BLM decided to address only two questions in the Draft IAP/EIS: 001

> "(1) What protections and enhanced management will be implemented for surface resources within the planning area?...(2) Will the BLM conduct oil and gas lease sales in the planning area, and if so, what lands will be made available for leasing?" (page 1-1 NPR-A Draft IAP/EIS, December, 1997).

As a result of this narrow and limited conceptual plan, BLM's Draft EIS for NPR-A either does not address, only superficially acknowledges, or simply dismisses as "beyond the scope" many of the issues which North Slope residents and institutions believe are central to their future and proper management of NPR-A's 23 million acres and of the planning area in particular.

What are these issues? And why are they being ignored and dismissed by BLM and the Department of the Interior?

The major issues of concern include those that were set forth in the summary section of ASRC's April 18, 1997 Scoping Comments (pages 1 and 2). ASRC's Comments and Recommendations to the BLM for the NPR-A Draft EIS were to:

1. Accord the uses, interests and views of the Inupiat people a high priority in the planning process;

2. Grant legally recognized rights and interests in land through law, regulation or land exchanges to protect cabins, hunting and fishing camps, intensive subsistence use areas, traditional use areas, and areas of cultural significance; 002

3. Preserve and protect ASRC's and Kaukpik Corporation's land selection rights and entitlement within NPR-A; 003

4. Correct the injustice of ANCSA's 1971 denial to ASRC and its shareholders of any land selection rights within the 23 million acre NPR-A - the location of four of our Villages and the area where most of our people live - before creating any other intervening third party legal rights in the form of oil and gas leases;

5. Address ASRC's pending (since March 1994) proposal for an equal value land exchange within NPR-A by making this proposal one of the Alternatives in the Final EIS. BLM should address in detail this Alternative: 004

Anchorage Office • 301 Arctic Slope Avenue • Suite 300 • Anchorage • Alaska • 99518-3035 • (907) 349-2369 • FAX (907) 349-5476

* adding, by land exchange, ASRC's unique Killik River ecosystem lands to the Gates of the Arctic National Park as previously proposed by the National Park Service; 004

* adding, by land exchange, ASRC's Ogotoruk Creek land selections to the Alaska National Maritime Refuge and thereby provide redress and justice to ASRC's shareholders for the failure of the Department of the Interior to disclose the radioactive testing previously conducted on these lands; and

* enabling ASRC to use its equal value exchange rights to acquire land within the NPR-A:

  - to provide title security to shareholders who have cabins, hunting and fish camps and other traditional family use areas in NPR-A;

  - to acquire surface estate lands in areas of NPR-A important to shareholders; and

  - to acquire fee lands and subsurface estate for their potential economic benefit to ASRC's shareholders.

6. Initiate a broad updated planning process for all North Slope lands which has as its objective maximizing the fish and wildlife, habitat and economic values for each of the North Slope's three land owners - the United States, the State of Alaska, and the Native people of the North Slope, who are the shareholders of ASRC and the eight North Slope Village Corporations. 005

As residents of the North Slope, as subsistence hunters who are directly dependent on NPR-A's resources, and as people who have supported BLM administration of NPR-A, we are at a loss to comprehend how and why our legitimate interests are being ignored in this IAP/EIS planning process. We have, on a timely basis, raised issues that are central to BLM and DOI policy with respect to the management of NPR-A and North Slope Federal lands.

Yet, the NPR-A Draft EIS ignores issues of importance which should be apparent to all. The Draft DEIS continues to be propelled by a commitment to produce a document on an arbitrary schedule which consists of little more than biologists drawing circles on maps to protect wildlife species. At the same time, the fundamental human needs and objectives of those who live in and depend upon NPR-A resources for life itself are being denied. 006

This is a serious mistake. It has consequences which, if not corrected, could lead to delay and litigation. A legally deficient Final EIS will not serve the Federal interest, the State of Alaska's interests, the oil industry's interest, or the interests of the Inupiat people who live in NPR-A and on Alaska's North Slope.

On behalf of ASRC and its shareholders, I recommend that BLM take needed and legally required steps to address the fundamentally important issues noted above which are associated with the IAP/EIS, the future of the NPR-A, and the critically important interests of those who live there. On behalf of ASRC's 7,300 shareholders, I make the following recommendations: 006

a) That BLM reschedule the IAP/EIS planning process for NPR-A. An extended, more reasonable and responsible schedule will permit BLM adequate time to make informed judgements about the issues presented and the major alternatives proposed and available. These alternatives include and issues outlined earlier in this letter, in ASRC's April 18, 1997 Scoping Comments, and in other correspondence to and discussions with Department officials.

b) That BLM address, as a major alternative in the DEIS and FEIS, the proposals presented by ASRC and the NSB, and others for land use planning and land exchanges to protect the interests of the Inupiat and other residents who live within or near the NPR-A.

c) That BLM act to cure the significant legal inadequacies of the Draft NPR-A EIS by issuing a supplemental DEIS which addresses in an Alternative the major proposals which have been made by the municipal, corporate, tribal and village institutions representing the North Slope's residents and the Inupiat people. 007

ASRC does not support closing areas of the Northeast NPR-A to leasing which could, with proper regulations and utilizing improved planning and new industry technologoy, be safely leased. It is ASRC's view that the NPR-A should be managed to protect the Inupiat people's subsistence uses and fish and wildlife resources. But, protecting these interests also requires a clear recognition that State and Federal policies, over time, have created a North Slope economy which is dependent on the jobs, economic activity and tax base to maintain the society that now exists. The only North Slope resource which can maintain this economic structure is environmentally responsible oil and gas exploration, development and production.

ASRC also opposes any land use designations which would expand "special areas", limit the use of such areas by North Slope residents, or add new Wild and Scenic River, National Park, Wildlife Refuge, Wilderness or other designations within NPR-A. Given BLM's arbitrary refusal to address issues raised by the North Slope's historic and only residents - the Inupiat people - in the Draft DEIS, it is difficult to reconcile BLM's (or the Department's) advocacy for Wild and Scenic River status for the Colville River. 008

These are ASRC's preliminary views on BLM's Draft IAP/EIS for the Northeast NPR-A. ASRC will submit more detailed and formal comments prior to the February 10, 1998 comment date.

Sincerely,

ARCTIC SLOPE REGIONAL CORPORATION

Jacob Adams
President

0106-001
The BLM has engaged in a dialogue with North Slope residents on management of the planning area. Significant elements of the Preferred Alternative, including surface restrictions for oil and gas activities in areas important for subsistence use, are derived from suggestions by the North Slope Borough and Nuiqsut. The BLM looks forward to continuing collaboration with North Slope residents and governments. Collaboration will be through the consultative process described in Preferred Alternative Stipulation 61.

0106-002
Please see Section II.G.

Authorization of camps and shelters on the public lands is covered by ANILCA § 1316. A description of subsistence activities and impacts on subsistence is addressed in the EIS (Secs. III.C.4 and IV). Although subsistence camps and cabins are in the EIS, they are not considered in more detail because additional field inventorying and study is necessary.

The BLM is working with the NSB to determine the extent and potential resolution to the issue of existing structures. This includes cabins and hunting and fishing camps within existing policy and procedures. The BLM has management mechanisms in place. The mechanisms are outlined in the final IAP/EIS (Preferred Alternative Stipulations 23, 26,39, 47, 60-64, and 74) to protect cabins, hunting and fishing camps, intensive subsistence use areas, traditional use areas, and areas of cultural significance.

0106-003
Please see Response 1851-010.

Alternatives involving land exchanges have not been considered in detail in this EIS because they are outside its scope and do not meet the purposes and objectives of this planning effort as set out in Section I.A. The purpose of this planning effort is to establish how BLM will administratively manage the important resources and values of the Northeast portion of the NPR-A, consistent with existing statutory direction in the NPR-A authorizing statutes. No land exchanges are presently being considered by the Department of Interior for this area.

0106-004
Please see Section II.G and Response 0106-003.

0106-005
The BLM is open to a discussion on the possibility of a North Slopewide planning process with other Federal, State, local, and other private land managers and owners.

0106-006
The BLM believes that the IAP/EIS process it has followed has been appropriate, legal and sufficient. The BLM gathered important local and scientific knowledge, voluminous and constructive public comment, and used this information to form a Preferred Alternative. And the Preferred Alternative balances competing resource values and interests in a responsible manner.

0106-007
Exchanges are beyond the scope of this IAP/EIS. Please see Response 0106-003. The BLM decided that a supplemental IAP/EIS is not necessary. Please see Response 0106-006.

0106-008
The Plan has not considered additions to national parks, national wildlife refuges, or wilderness designation (see Sec. II.G). Based on responses from landholders along the Colville River–ASRC and the State—the BLM has determined in the Preferred Alternative that the river is not suitable for Wild and Scenic River designation. The Plan considers additions to existing or creating new Special Areas, but this designation does not affect access by local residents.

0206

Robert Franz
169 Wildflower Drive
Plymouth Meeting, PA 19462
Robert_G_Franz@BPRRD.COM
myself

I am very disappointed that the draft EIS seems to be in total isolation to the effects of oil field/natural gas development in areas adjacent to this area, and which are already open to development, either current or planned.

One would read the various plans and assume that the impacts proposed are only the result of potential development, and have no bearing on whether adjacent areas are destroyed by development, which would impact upon wildlife options.

The NPR-A is an exceptional area of undeveloped wilderness, high in natural values that cannot be saved once development starts.

Teshekpuk Lake and Colville River need permanent protection, and the wetlands and riparian areas adjacent to them.

At least 90 species of birds return to this region every year, as well as caribou fromthe Western Arctic herd. With arguments still on going as to whether the decrease in caribou herds in the Prudhoe region are natural or as a result of the extensive development, it is not time to put another herd at risk.

I support Alternative A. If one examines the special areas that already are present as designated in the draft EIS, only Alternative A protects those areas. The subsistence areas also seem to come up short in the way of protection except for Alternative A.

I find it very disturbing in the language protecting wildlife that restrictions that make oil production less than favorable (my words) can be waived in alternatives D and E. There is probably no oil company in existence that could not find accountants to argue waiving the restrictions under and all circumstances.

On the issue of water withdrawl, I question whether water flows have been compared to the very high level of water requirments that oil drilling requires, especially under extensive development. As indicated in the draft EIS, the climate is not conducive to fish except in special areas and deep lakes. Water usage is not to be taken lightly. 001

It is possible that I could support elements of Alternative B if modified. However, the draft EIS does not give me any support that a suitable modification to protect wildlife and wilderness values can come about except with Alternative A. I support Alternative A.

(The comments within are mine, and do not reflect those of any company nor my employer.)

It is OK to release my name and street address to the public with these comments.

Entered on: 1/26/98

0206-001
The BLM urges the commenter to review Sections IV.A.1.h.3(d) and IV.A.1.b(4)(f) concerning future demands for water. The discussion in Section IV.A.1.h.4(f) is a relevant example of drawdown on a small lake. Approved water sources likely would be from lakes with no surface inlet or outlet or resident fish populations. Preferred Alternative, Stipulation 20 prohibits water withdrawal from rivers and streams during the winter. The large amount of water required for reservoir-waterflooding operations could include using surface water, groundwater, seawater, or other sources. Treated seawater commonly is used in waterflooding operations during early production. Later, produced formation water is reinjected to enhance oil recovery. A discussion of waterflooding is found in Section IV.A.1.b.5(c).

0263

- There is no need to fast-track new leasing to the oil companies in the NPRA when there is no national energy policy or evidence of a compelling rationale.
- Since any oil found in NPRA can be exported, I don't believe it would serve the "total energy needs of the nation" as required by the law governing NPRA.
- A new boom of oil industry sprawl threatens America's arctic. A vast, unique wilderness containing internationally important waterfowl and other wildlife is at stake.
- Permanent protection is needed for Teshekpuk Lake and Colville River Special Areas before any leasing occurs. These areas should be forever off limits to roads, pipelines and industrial activity. A new conservation alternative is needed because none of the DEIS alternatives provide adequate protection to fish, wildlife, rivers, wildlands or wilderness values.
- There should be a specific commitment made for future public review and comment of the DEIS once a "proposed alternative" has been fashioned.
- The range of DEIS alternatives is inadequate. None of them provide "maximum protection" for special areas as required under current law. There needs to be a conservation alternative that proposes permanent protection for Special Areas, recommends "wild" river for the Colville, and does not allow leasing now.

I strongly support the formal comments submitted by the Wilderness Society and Alaska Wilderness League.

Sincerely,

Name _____

Address _____

_____

City _____ State _____ Zip _____

0266

January 24, 1998

Mr. Gene Terland
NPRA Project Coordinator
Bureau of Land Management (930)
Alaska State Office
222 W. 7th Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland:

The National Petroleum Reserve - Alaska was established by President Harding as a petroleum reserve more than 70 years ago and should be opened for exploration and development. I strongly urge BLM to select Alternative E in the NPRA Draft Environmental Impact Statement. The entire planning area should be opened for oil and gas exploration without the creation of new "Special Areas" or the expansion of existing "Special Areas."

Approving a lease sale in the NPRA simply makes the planning area available for exploration and development. Any subsequent industry projects will face a myriad of environmental and regulatory tests as they move through the permitting process. The oil and gas industry has proven over the past 25 years that it is capable of operating large scale exploration and development projects in Arctic conditions while maintaining the highest standards of safety and environmental sensitivity.

The U.S. Congress has mandated that oil exploration be the dominant use in the NPRA and authorized the Department of Interior to mitigate potential impacts. Any stipulations placed on industry, therefore, should be based on sound science and mitigation measures should take precedence over land set-asides.

I encourage BLM to move forward with an oil and gas lease sale in the NPRA as quickly as possible. Thank you for the opportunity to comment on this project.

Sincerely,

Mike LeVanson

Name

0267

January 24, 1998

Mr. Gene Terland
NPR-A Project Coordinator
Bureau of Land Management (930)
Alaska State Office
222 W. 7th Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland:

I would like to express my support for full leasing of the Northeast section of the National Petroleum Reserve - Alaska, known as the "Planning Area" as described in the recently-released Draft Environmental Impact Statement. While I support the full leasing recommendation of Alternative E, I do not support the creation of new Special Areas or the expansion of existing Special Areas. In addition, I would like to record my opposition to any federal Wilderness designations in the petroleum reserve and the designation of the Colville River as a Wild and Scenic River.

As an alternative to land set-asides and closures, I support reasonable stipulations and other measures to mitigate potential impacts from development. I strongly object to the closure of the Teshekpuk Lake and Colville River Special Areas to leasing and development activity as such action would block exploration of the highest prospective areas of NPR-A.

In light of declining oil production at Prudhoe Bay and Kuparuk, it is vital that we develop new oilfields to sustain the Alaska economy and strengthen America's global energy position. American oil production is at its lowest level in four decades and nearly half of the oil now used in the U.S. is imported. According to the U.S. Energy Department, U.S. oil reserves have fallen 30 percent since 1977 and production has declined more than 25 percent since 1986. The Energy Department estimates imports may account for 68 percent of U.S. oil supplies by 2015.

America must look to NPR-A and other high potential areas within the United States to reverse its increasing reliance on foreign sources of oil. Please move forward as quickly as possible with a lease program that opens the entire Northeast sector of the petroleum reserve to exploration.

Sincerely,

Beverly J. Carlson

Name

0268

January 24, 1998

Mr. Gene Terland
NPR-A Project Coordinator
Bureau of Land Management (930)
Alaska State Office
222 W. 7th Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland:

I strongly urge the Bureau of Land Management to open the entire Northeast section of the National Petroleum Reserve - Alaska to oil and gas leasing, exploration and development. Alternative E is the only land management regime in the Draft Environmental Impact Statement that is consistent with the standard and dominant use Congress prescribed for this unit.

While I support mitigation measures and special stipulations to minimize potential adverse impacts, I do not support the expansion of Special Areas or the creation of new Special Areas as proposed under Alternative E. I also oppose Wild and Scenic Rivers designation for the Colville River, as well as any federal Wilderness application in the petroleum reserve.

Three decades of oil and gas activity in the Arctic has clearly demonstrated that industry has the capability, technology and experience to operate throughout Alaska's North Slope while maintaining the highest standards of safety and environmental sensitivity. Mitigation measures, therefore, should take precedence over land set-asides.

I encourage the Bureau of Land Management to move forward with a lease sale in NPR-A as soon as possible with the understanding that any leasing program in the petroleum reserve should not preclude potential oil and gas leasing in the Coastal Plain of ANWR.

Sincerely,

Russell Joyce

Name

0277

SENATOR DAVE DONLEY
ALASKA STATE LEGISLATURE

January 27, 1998

Mr. Gene Terland, NPR-A Project Coordinator
Bureau of Land Management (930)
Alaska State Office
222 West 7th Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland,

As a life-long Alaskan, I encourage BLM to not only select Alternative E in the Draft NPR-A EIS, but also to move forward with a lease sale in 1998. As Prudhoe Bay reserves dwindle, Alaska's entire economy will ultimately rely on new discoveries in the very near future.

Given Alaska's overwhelming dependency on oil and gas, I believe that any NPR-A leasing program should in no way preclude potential leasing in the Coastal Plain of the Arctic National Wildlife Refuge. ANWR's tremendous potential cannot be dismissed as a resource to create jobs for Alaskans and energy for Americans.

Sincerely,

Dave Donley

Senator Dave Donley

CC: AK Oil & Gas Association
Resource Development Council
Arctic Power

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MEMBER: Senate Finance Committee • Legislative Budget & Audit Committee
• Senate Community & Regional Affairs Committee

Dedicated to Alaska

0311

January 22, 1998

Mr. Gene Terland:
NPR-A Planning Team
Bureau of Land Management
222 W. 7th Avenue
Anchorage, AK 99513-7599

The National Petroleum Reserve-Alaska (NPR-A) is one of Alaska's greatest wildlife and wildland sanctuaries. On several occasions, I have taken canoe trips on the Colville River from the upper Nigu River down to Umiat or Nuiqsit. These trips have been some of the highlights of my life, in a lifetime of wilderness travel all over Alaska. Why? For several reasons. One, this area is one of the greatest repositories of silence - a quality that is rapidly disappearing from our state and our planet. Much of the landscape is essentially a wilderness, despite the fact that none of the lands in NPR-A have been designated wilderness. Second, the Colville River corridor harbors nesting habitat for large numbers of peregrine falcons, gyrfalcons, rough-legged hawk and other raptors. NPR-A has the highest density on the entire North Slope of nesting birds of prey and songbirds. It is one of the few places in North America to have the experience of seeing so many raptor species all in one place, living in their natural habitat. Each time I've been down the Colville, I've seen many yellow-billed loons, Pacific brant, white-fronted geese, brant and Canada geese. In fact, the reserve harbors over 20 percent of the world's population of Pacific brant. Third, for wildlife, NPR-A offers outstanding opportunities to see the Western caribou herd and some of Alaska's farthest north ranging moose, as well as wolves, foxes, grizzlies and other wildlife. Finally, the rich archeological and paleontological resources offer an unprecedented opportunity for people to understand Alaska's rich prehistory.

I am fully aware that NPR-A was originally set aside as an oil reserve for the nation, so I understand that some of the values which I've described may someday diminish, a consequence which I find unacceptable. In my analysis of the Draft Environmental Impact Statement (DEIS), it is inadequate and incomplete. I view the DEIS as a rush job -- a document which was compiled by the best scientists available in a short period of time, using data which was available at the time, but that isn't necessarily current. I question the rush on the part of the Interior Department. There is no justification to develop petroleum fields in NPR-A at this time.

In many ways, the situation with the DEIS feels like a deja vu from 1987, when the Interior Department released the Arctic National Wildlife Refuge's 1002 report. At that time, there was no National Energy Policy to justify developing the biological heart of the refuge. Here again, we have a DEIS that fails to address an energy policy for the nation -- one that places a premium on conservation, one that sets standards for energy efficiency -- in our vehicles, in our homes, in our appliances, in our industries.

I do not believe it is the right time to pull oil out of NPR-A. A mere 20 years has passed since Prudhoe Bay began pumping oil. This is but the blink of an eye -- barely enough time to adequately determine the cumulative effects of oil development on Alaska's North Slope. Alaska is amidst a new oil boom, with new developments along many miles of the Beaufort seacoast. Especially in light of all the new development, a conservative approach is called for. I believe we should delay any premature oil lease sales and development until we have more information.

What is the best use of NPR-A? Shall we damage or destroy internationally significant wildlife and waterfowl populations, wild rivers and wilderness values now for the short-term gain of oil companies and associated industries? Or shall we exhibit advanced wisdom, by protecting the lands, waters and wildlife of NPR-A -- a landscape that is the last frontier of The Last Frontier. Years ago, when waters filled up behind the Glen Canyon dam, creating Lake Powell, lost to the world were a labyrinthine network of canyons and the dwellings and rock art of ancient civilizations. David Brower, then president of the Sierra Club, called Glen Canyon the "place no one knew." I believe NPR-A is America's last "Place no one knew." It would be a tragedy if we allow NPR-A to be developed before the American people have an understanding of what we stand to lose should we cover yet another arctic landscape with drill pads, gravel roads, and a major industrial development.

While my greatest wish is that NPR-A remain free of oil development, I know that is an unrealistic scenario. In light of this, I find NONE of the alternatives in the DEIS acceptable. I would propose a new alternative which includes the following:

*Allow no lease sales anywhere in NPR-A until a National Energy Policy exists for the nation. 001
*Permanent wilderness designation for Teshekpuk Lake Special Area 002
*Designation of Colville River as a National Wild and Scenic River. Establish 2-mile non-development buffer on either side of the river 003
*Remove all subsistence structures in Teshekpuk Lake Special Area erected after June 1998. 004
*Allow no lease sales anywhere in NPR-A until permanent protection status is secure for Teshekpuk Lake and Colville River 005

Thank you very much.

Sincerely,

Karen Jettmar

0311-001
Domestic oil and gas exploration and development is consistent with the Department of Energy's draft Comprehensive National Energy Strategy. For a more complete discussion, please see Response 1851-002.

0311-002
Please see Response 1851-058.

0311-003
The BLM has determined as part of the Preferred Alternative that the Colville River is not suitable for designation as a Wild and Scenic River. We, however, have restricted surface development within a mile of the river and have determined to conduct additional consultation with State, North Slope Borough, and affected communities, before authorizing development within 2 mi of the river.

0311-004
The BLM is working with the NSB to determine the extent and potential resolution of the issue of existing structures, including cabins and hunting and fishing camps, within existing policy and procedures.

0311-005
Please see Response 1851-058.

0313

January 23rd, 1998

Mr. Gene Terland, NPRA Planning Team
B.L.M.
222 West 7th Avenue
Anchorage, Alaska 99513-7599

Mr. Terland:

The comments below will refer to the document entitled "Northeast National Petroleum Reserve-Alaska Summary of the Draft Integrated Activity Plan/Environmental Impact Statement" dated December 1997. I am unable to attend any of the public hearings on this matter being held by your agency, however I request that these comments to included in the hearing record on the same basis as if they had been presented at one of them, and taken into consideration when your team makes it's final decision on it.

First, I would like to state that I do not believe that the choices presented in this document are comprehensive or adequate. I believe that the wilderness and wildlife values in the "NPRA" area are extremely valuable, and MUST be protected. I believe that the agency within the federal government that has the necessary expertise to manage the area is the U.S. Fish & Wildlife Service, and that agency should be the one to make decisions on any steps necessary to put critical wildlife habitat areas off limits to drilling and other oil-exploration and/or production activities, either on a seasonal or permanent basis. I recommend that the U.S.F.&W.S. be given that authority and responsibility, as soon as possible. I realize that this will require action at the Departmental, and possibly Congressional, level. I urge that this action be taken, by those persons with the authority to do so, as soon as possible. 001

Second, I believe that NPRA should be opened to oil production only in time of a national emergency. Exploration necessary to determine the extent and location of oil within the boundaries of this area, under conditions ensuring that no harmful effects will be experienced by the wildlife species that use the area, either on a seasonal or all-year basis, may be permissible. 002

Third, I believe that before this reserve is even explored, let alone tapped, this country should have a national energy policy that has as it's first principles efficient use and conservation. I realize that this is the responsibility of the Department of Energy, and not the B.L.M. or Department of Interior. However, it should be a condition that must be met before any exploration or production of oil or gas from NPRA is permitted. 003

I understand that the Northern Alaska Environmental Center has drawn up a plan for designating certain critical habitat areas within NPRA as Wilderness Areas. I urge that this plan be adopted, before any further exploration is permitted in NPRA.

Sincerely,

Gerald R. Brookman

Gerald R. Brookman

0313-001
The commenter is correct that transferring the NPR-A to the Fish and Wildlife Service would require Congressional action. It is beyond the scope of this plan.

0313-002
The National Petroleum Reserve Production Act in 1976 described the purpose of the NPR-A. It was not to be used for national emergency, but to serve the Nation's total energy needs. (See Sec. I.B.1. for more discussion of the purpose of the Reserve.) Until the 1970s, the Federal Government funded exploration of the NPR-A. Legislation in 1980, however, changed the Federal Government's approach to extracting oil and gas from the Reserve to one dependent on private industry. Without assurance of the right to produce oil, oil companies are not willing to explore. Moreover, development of an oil field once exploration is completed requires 4 years. Such development likely would be too slow to effectively respond to an emergency and might be so rushed as to compromise prudent environmental protections.

0313-003
Domestic oil and gas exploration and development is consistent with the Department of Energy's draft Comprehensive National Energy Strategy. For a more complete discussion, see Response 1851-002.

0325

Rick Rogers

Gene Terland
NPRA Project Coordinator
Bureau of Land Management (930)
Alaska State Office
222 W. 7th Ave.
Anchorage, AK 99513-7599

RE: NPRA Public Comment, Draft EIS

Dear Mr. Terland:

These comments are submitted with regard to the NPRA draft EIS that is the subject of current public review.

I am supportive of Alternative E, which proposes full leasing of the high potential oil and gas areas within NPRA. This is the only alternative that is consistent with the original congressional intent for creating NPRA in the first place. This alternative recognizes the reason NPRA was set aside. If portions of NPRA are to be closed to leasing, then the same reasoning would open the 57 million acres of Wilderness in Alaska to consideration for leasing. The question at hand should not be whether to lease, but on what terms.

Alternative E should be modified to eliminate the "Special Areas" within the planning area. These areas can be leased with reasonable mitigation measures for wildlife, as has been successfully demonstrated at Prudoe Bay, making set asides unnecessary.

Mitigation measures throughout the planning area should be based on sound science. For example what data supports a buffer on goose molting areas of over ½ mile. The Geese in the urban environment of Anchorage don't seem to have difficulty molting, and I'm sure the same is the case within the planning area which will have far less habitat manipulation and disturbance than Alaska's largest city. 001

Studying the eligibility of rivers within the planning area for the sole purpose of nomination as a Wild and Scenic Conservation System Unit is in direct conflict with ANILCA and is an inappropriate undertaking for the planning team. Alaska already has over 57 million acres of wilderness. ANILCA promised the people of Alaska "NO MORE." The proposed wild and scenic rivers are a further abandonment of the Federal Government's "promise" to Alaskans

I urge the BLM to adopt a modified alternative E, less the special areas, without wild and scenic river designations, and with scientifically defensible mitigation strategies. Such direction would be consistent with the congressional intent for the area and the interest of Alaskans and all Americans who depend on oil in their daily lives.

Sincerely,

Rick Rogers

0325-001
The justification for buffer widths is covered in Response to Comment 1656-001. The reasons for doubting the validity of studies done at Prudhoe Bay—as models for goose behavior in the Teshekpuk Lake area—also apply to the behavior of Canada geese in Anchorage.

0329

nick
14 Tisbury Ct
Baltimore, md 21236

the Earth

-- Official policy to prevent/STOP any and all oil exploratory wells or actual drilling for 200 years !!!!!
Unless the US is directly attacked on US soil by a foreign invader causing a ground troop war that last so long that our domestic oil reserves are depleted (in other words NO MORE OIL EXTRACTION EVER!!!)

-- Designate the area above below and on the land area a National Park and Wilderness area under the management of NPS and Native Alaskans that care about the land. 001

-- Establishment of a small visitor center and some hiking trails but NO HUNTING unless it is by real native (non-white) Alaskans/tribes and then regulated by bag limits, and no endangered species to be taken 002 003

I do not want my name and street address released to the public with these comments.
Yes, I want to be added to the BLM's NPR-A mailing list.

Entered on: 1/30/98

0329-001
Creating a national park or a wilderness area or transferring lands in excess of those authorized under ANCSA to Alaskan Natives requires Congressional action. (See also Response 1851-058.)

0329-002
Given the area's remoteness, inaccessibility, inhospitable environment, and the dispersed and small numbers of visitors, such a development would be prohibitively expensive to construct, run, and maintain. Development in this roadless region of Alaska would be ineffective and inconsistent with the primitive recreational setting afforded by the area.

0329-003
Federal law forbids restricting hunting rights by race.

0597

From:
To:
Date: Fri, Feb 6, 1998 11:03 am
Subject: NPRA DRAFT EIS

Dear BLM team,
First I'd like to thank you for the opportunity to comment on the Draft
IAP/EIS on the development in the eastern NPR-Alaska. My name is Joseph
Ruater, I live at
I have resided in Alaska since 1980, and at this address since 1988.

My interest in this issue stems from my direct experience working on the north slope as a laborer removing the pipeline construction camps, as a biologist assisting at the Tulik lake research station on the slope, and as a avid lover of wilderness and wilderness travels here in Alaska.

I was able to review the summary of the draft EIS made available at the BLM office in Fairbanks. On January 22 I attended the public hearing on the issue and gave testimony on my evaluation of the proposal. In this short note I would like to elaborate certain points of my evaluation that I was unable to present in the time limited to public testimony.

I will limit my comments to 2 areas I consider most important in this issue.
First of these is my and many other biologists concern for both the colville river corridor, and the Teshekpuk Lake area. The draft EIS identifies these areas as "speacial areas" recognized in 1977. This most recent analysis again elaborates on the value of Teshekpuk lake area as an important ecological reserve important to many waterfowl species and carribou in the area, and traditional uses of the the deep lakes to the South of Teshekpuk lake. The significance of the water fowl to the area, and of the ecological composition of the area to its waterfowl populations has been elaborated in numerous studies (Example is Eric Taylors thesis on the Brant colony in the area). This merits action: This area should be recognized permanently as a wildlife refuge that will not be open to the present proposal for development nor any future proposals. The ambiguity of "speacial area" is not appropriate. This as well pertains to the colville river corridor. The largest of our north slope rivers, the Colville has immense wilderness and recreational values elaborated in the Draft and by testimony at the Fairbanks hearings. At minimum the area is deserving of designation as a wild and scenic river. I say at minimum because the topography of the area is such that the 1/2 mile protected corridor provided by the WSR designation will not preserve the wilderness characteristics in such an area where vistas extend to the tens of miles. I would suggest a 10 to 15 mile wide corridor to protect the recreational value of this incredible river. 001

Second, I would like to discuss my concern for how/why this process was initiated:

Originally set aside in 1923 as an area of land that could provide the nation with badly needed energy in a time of national crisis. This area is now the largest expanse of undeveloped public land left in America. What has initiated this evaluation in the first place in these times of falling gas prices, a lack of government initiative and incentives for energy conservation, and an actual export of much of our domestic Alaskan crude production? 002

The Draft plan does not discuss this in any detail and the nation needs to be made aware of these actions before a discussion concerning where to position oil leases in the area can even begin. The NPRA's use is not exclusively mandated to petroleum development. Other potential values for this expanse of land must be analysed and public opinion querried before an exclusive win or lose economic evaluation of oil development in the area is used as our basis of an integrated plan for the area.

I am not stonewall against petroleum development in the area, but the present approach to making land use decisions in the area leads me to feel offended that large corporate interests rather than the publics interests are driving these developments. I noticed that in the the summary of the 003
IAP/EIS on page 60 in "effects of alternatives" section under the economic effects of the different alternatives: the economic evaluation focuses exclusively the loss vs gain of millions of dollars with increasing probability for higher revenues with the alternatives that have less stipulations on where the oil leasing can occur. No other potential future economic effects are portrayed or considered This does not seem an integrated activity plan.

Other types of economic benefits concerned with the decisions that preserve both the biological and wilderness resources in the NPRA must be evaluated.
An example is our bourgeoning tourist industry. Many people come to Alaska with a love for wild country although they themselves may not be capable physically of accessing such areas. But it is the existence of such areas that is a major motivating factor in making tourists visit Alaska and make efforts to get near, or get "a taste of Alaska" in more accessable parks and
Recreation areas close to urban centers. I think a survey of visitors to
Alaska and people who would buy preferencially Alaska products would find that most all knew of and were familiar with the wilderness values of the
Arctic National Wildlife Refuge, Prince william Sound and and other remote wilderness areas here in Alaska that they may never visit, but provide the back drop by which Alaska has become evaluated as a popular tourist destination.

By additionally making people aware that they have in Alaska such a place called Teshekpuk lake that is a protected area in the arctic wilderness where an incredible and ancient menagery of water fowl gather each year, including spectacular concentrations of geese and brant that yearly use the area as there molting grounds, this does have some economic benifit that should be recognized in contrast to a fast, "potentially lucrative" and irreverent petroleum development project on our Nations largest undeveloped commons.

Thank you for taking my comments on this issue and keeping me informed on its developments.

Sincerely, Joseph Rueter

003

0597-001
Creating a National Wildlife Refuge requires Congressional action and is beyond the scope of this IAP/EIS. (Such an action is similar in this respect to creating a wilderness area. See also Response 1851-058.)

As the commenter notes, the draft IAP/EIS contemplated designating the Colville River as a part of the National Wild and Scenic River System. Based upon the opposition of other landholders along the river, however, we have concluded that it is not suitable for inclusion in the system. Nonetheless, the Preferred Alternative does restrict surface structures near the Colville.

0597-002
As noted in Section I.A., the approach of oil production infrastructure to the planning area's eastern boundary has prompted intensified interest in leasing oil reserves in the NPR-A. That section has been modified to address the national interest in oil and gas leasing in the planning area. Congress has opened the NPR-A to leasing, and consideration of oil and gas leasing in the NPR-A in this IAP/EIS is consistent with the purposes of the Reserve, as put forward in the Naval Petroleum Reserves Production Act of 1976 and in P.L. 96-514 passed in December 1980. (See the discussion in Section I.B.1.) It also is consistent with the goal of reducing dependence on foreign oil sources, a goal recently identified in the Department of Energy's draft Comprehensive National Energy Strategy. For a further discussion, please see Response 1851-002.

0597-003
The draft EIS summary document does not include the minimal economic impacts of tourism and recreation in the NPR-A. The complete draft EIS document does analyze these impacts. For alternatives A through E, 14 to 20, 1-week-long recreational float trip parties per year are estimated in Sections IV.B.11.a, IV.C.11.a, IV.D.11.a, IV.E.11.a, and IV.F.11.a. The corresponding employment in the recreation field is equal to one person for 4 to 6 months each year. Tourist visits to the Alaska increases approximately 5 percent per year. Tourists now numbers more than one million per year. Part of the attraction is Alaska's vast wilderness, but few tourists visit the NPR-A. Oil and gas developments begun in the late 1960s and centered at Prudhoe Bay do not appear to have diminished the growth of tourism to Alaska.

0603

American Rivers

February 9, 1998

BY FAX

Gene Terland
NPR-A Planning Team
Bureau of Land Management
222 W. 7th Avenue
Anchorage, AK 99513-7599

Re: Northeast National Petroleum Reserve-Alaska
Draft Integrated Activity Plan/Environmental Impact Statement

Dear Mr. Terland,

American Rivers is the nation's leading river conservation organization with more than 20,000 members nationwide, including many who have an interest in protecting the river resources of the Northeast National Petroleum Reserve-Alaska (NPR-A). In its twenty-five year history, American Rivers has worked extensively to protect and restore rivers under the federal Wild and Scenic Rivers Act and other statutes and has actively assisted states and local groups with their river conservation efforts.

American Rivers has worked extensively with several federal agencies in planning for the river resources on the lands they administer. We have assisted the planning staff of the Bureau of Land Management (BLM) in Washington, DC to clarify administrative direction for consideration of potential wild and scenic rivers on BLM lands. We have also worked closely with BLM staff in Alaska on a variety of river planning issues. In 1993, we successfully resolved litigation with BLM over its unlawful decision not to study potential wild and scenic rivers in Alaska, as required by section 5(d) of the Wild and Scenic Rivers Act.

The Draft Environmental Impact Statement (DEIS) properly recognized that the Colville River is eligible for inclusion in the National Wild and Scenic Rivers System. The DEIS documents it numerous outstandingly remarkable values. The river provides outstanding habitat for raptors, as well as important habitat for moose, brown bear, wolves, wolverines and at least twenty species of anadromous and freshwater fish. The Colville is vital for subsistence activities and offers superior recreation values for remote wilderness areas. The Colville also has world class paleontological deposits. American Rivers urges BLM to protect the Colville River, as well as its significant tributary streams, at its highest classification -- Wild River.

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American Rivers recommends that the alternatives set forth in the DEIS should include an alternative which would propose new designations of Special Areas, Wild and Scenic Rivers and other conservation measures to protect the natural resources of the Arctic. The DEIS does not offer a compelling case that development of potential oil reserves is more important than protecting the outstanding natural values present in the NPR-A, including its wild rivers. 001

Although the DEIS does document well the outstanding values of the Colville River, it fails to adequately evaluate other potential wild and scenic rivers in the NPR-A. The analysis of potential Wild and Scenic rivers could be substantially improved to more fully evaluate rivers within the planning area, as well as be more consistent with agency planning elsewhere in Alaska and the nation. 002

Section 5(d) of the Wild and Scenic Rivers Act establishes a broad mandate to federal-agencies to consider potential wild and scenic rivers in their land and resource management planning. Most agency plans undertaken since 1990 examine comprehensively all significant rivers and streams within a planning area rather than merely relying upon rivers identified in public comment or other inventories. In addition, the planning process is evolving from an emphasis upon identifying large rivers eligible due to white water recreational opportunities to recognizing the eligibility of rivers with outstanding fisheries, botanical, ecological and other values.

Planning teams should assess all resource values that would qualify a river for inclusion as an eligible wild and scenic river. For example, planning teams sometimes ignore, or merely give cursory acknowledgment to the fact that ecological values may qualify a river for inclusion in the national rivers system. See U.S. Departments of Interior and Agriculture, National Wild and Scenic Rivers System: Final Revised Guidelines for Eligibility, Classification and Management of River Areas ("Interagency Guidelines"), 47 Fed. Reg. 39454, 39457 ("In addition to the specific values listed in Section 1(b) of the Act, other similar values, such as ecological, if outstandingly remarkable, can justify inclusion of a river in the national rivers system.").

American Rivers has also been involved in numerous planning efforts in which rivers that had previously been relegated only to a "Special Interest Area," were later found to be obvious candidates for inclusion in the national rivers system.

BLM should determine the eligibility of rivers by comparison of values within physiographic provinces represented in the planning area, not, as in the DEIS, by generalized comparisons to rivers throughout Alaska. Examination of rivers within this context would enable far more meaningful comparisons of streams within the NPR-A. Such an approach is also fully consistent with the objective of developing a wild and scenic rivers system that fully represents the breadth and diversity of rivers throughout the nation. 003

Another important evolution in the federal lands planning process has been a more expansive interpretation of the term "river." Planners no longer restrict themselves to "segments" of large rivers, but are identifying a range of rivers that meet the broad definition of river provided in the Wild and Scenic Rivers Act: 003

> "River" means a flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes.

16 U.S.C. §1286(a).

For example, planners on the Tongass National Forest in Southeast Alaska have determined that a glacier is a representative example of a "flowing body of water" within the Alaska Coast Range physiographic area. They have also concluded that Sarkar Lakes, a series of interconnected lakes, is appropriately defined as a river system.

Similarly, an intermittent stream is an appropriate representative example of a river in an arid environment. For example, BLM's Safford District planners have concluded that several intermittent streams are eligible for wild and scenic status. The Oregon Omnibus Wild and Scenic Rivers Act included several intermittent streams, including the North Fork Owyhee River.

The Wild and Scenic Rivers Act and the federal lands planning process offer the opportunity to protect river systems. American Rivers believes that the goals of the Wild and Scenic Rivers Act can best be achieved through preservation and recognition of river systems as integral wholes, with full recognition for the contribution of headwaters and tributary streams. The study and protection of headwater and tributary streams is an important development of the Wild and Scenic Rivers system. In many cases, headwaters and tributary streams contribute significantly to outstandingly remarkable values present in the main stem of a river, particularly downstream fisheries. A prime example of the opportunity available to BLM in the NPR-A would be to include the major tributary streams to the Colville as eligible for inclusion in the national rivers system. 004

Unfortunately, the NPR-A planning team considered far too narrowly the criteria for inclusion in the National Wild and Scenic Rivers System. For example, the planning team relies upon the 1978 Section 105(c) report to conclude that the limited boating season available on the Ikpikpuk River renders it ineligible. The absence of whitewater boating does not mean that a river does not have outstanding recreational values. As the planning document makes clear, the remote rivers of the NPR-A are the principal places that any travel in this spectacular land occur. Canoeing, or even hiking along a river, could certainly lead to a finding that a river possesses outstandingly remarkable recreational values. The reasoning provided by the study team in DEIS, incorporating perspectives more than 20 years old, is not sufficient to exclude the rivers in the study area from consideration. For example, shallow low flows do not affect a river's potential eligibility for outstandingly remarkable fisheries, wildlife, scenery, ecological or other values. 005

It is remarkable that the analysis of 17 rivers within the planning area did not find a single river that possesses outstandingly remarkable fisheries, ecological, or scenic values. The omission of any such identified values indicates that BLM's planning team should be expanded to insure that its resource assessment is adequate to identify the potential wild and scenic rivers which flow across the NPR-A. 005

Finally, Appendix G of the DEIS, which establishes management objectives for Wild and Scenic Rivers accurately states the prohibition of developing hydroelectric facilities as set forth in Section 7 (a), however, the standards are in error when they state that other water resources projects are prohibited subject to this standard. See Section 7(a); 16 U.S.C. section 1288(a). 006

We trust that these comments are helpful in ensuring the protection of the spectacular wild river resources of the NPR-A. American Rivers supports an additional alternative that protects existing resource values and provides for special designation for resources including management of the Colville River and its significant tributaries, as well as other eligible rivers and streams as Wild and Scenic Rivers. If you have any questions concerning any of the matters set forth in these comments, please do not hesitate to communicate with me.

Sincerely,

Thomas J. Cassidy, Jr.
General Counsel

cc: Deborah Williams, Special Assistant to the Secretary for Alaska
Patrick Shea, Director, BLM
Tom Allen, Alaska State Director, BLM
Allen Smith, The Wilderness Society
Jack Hession, Sierra Club
Sylvia Ward, Northern Alaska Environmental Council
Brian O'Donnell, Alaska Wilderness League

Original to follow by mail

0603-001
Alternatives B through D each provide for a Wild and Scenic River designation and the Preferred Alternative and Alternatives B through E propose new or additions to existing special areas. Congress has identified development of the Reserve's potential oil reserves as its primary purpose. The alternatives attempt to strike a balance between oil development and care for the NPR-A's other values.

0603-002
Please see Response 0603-005.

This Side Blank

0603-003
The WSR planning team (please see Response 0603-005) was asked to review all rivers in the planning area given the broad definition of "river" as given in the WSR Act and the BLM Manual 8351–*Wild and Scenic Rivers Policy and Program Direction for Identification, Evaluation, and Management.* The BLM Manual 8351 also provided the guidance used to determine an outstandingly remarkable scenic, recreational, geologic, fish, wildlife, cultural, or historic value. Other than along the Colville River, the team found no values of national or regional importance or of an outstandingly remarkable nature in the geographic regional context outlined in the BLM manual.

0603-004
The BLM believes it should compare, evaluate, and determine the values of the rivers represented in the planning area. The agency did inventory several major tributaries of the Colville River for inclusion in the Wild and Scenic River System.

0603-005
In evaluating rivers in the planning area for inclusion in the Wild and Scenic River System, the WSR planning team did not limit itself to information in the Section 105(c) report. However, the 105(c) report was used as a beginning point. Information in that report was verified in 1997 during field inventories and expanded by adding 16 rivers not previously inventoried. The planning team is aware that the absence of such characteristics as whitewater boating, shallow low flows, or a limited boating season do not preclude a river from eligibility. The team's final determinations on river eligibility is based on the understanding that a river need only be free-flowing and possess one outstandingly remarkable value in the context of the geographical region. The team, comprised of the State recreation program lead and one fisheries biologist, wildlife biologist, hydrologist, natural resource specialist (recreation and visual resources), and an archeologist, found no river other than the Colville to have outstandingly remarkable values in the context of the geographical region.

0603-006
Some Federal agency groundwater developments for range, wildlife, recreation, or administrative facilities may be allowed, if they do not negatively impact the values for which the river was designated (see Appendix G, Sec. B.3, Hydroelectric Power and Water Resource Development). This section was taken directly from BLM Manual 8351, *Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation, and Management* (Secs. I.B.3, II.B.3, and III.B.3) and correctly makes this point.

0713

From:
To: Gene Terland <gterland@ak.blm.gov>
Date: Thu, Feb 12, 1998 7:47 pm
Subject: =?iso-8859-1?Q?Alaska=92s?= National Petroleum Reserve

Rachel Thomas

February 7, 1998

Gene Terland
NPRA Project Coordinator
Bureau of Land Management (930), Alaska State Office
222 West 7th Avenue, Anchorage, AK 99513-7599
E-mail gterland@ak.blm.gov.

Dear Mr. Terland:

Reference the Draft Environmental Impact States on Alaska's National
Petroleum Reserve.

I recommend a modified Alternative E be adopted which provides for full leasing in the NPRA Planning Area. It is the only alternative that fully complies with Congress's directive for responsible exploration and developme t. The modifications requires are that some stipulations not supported by experience need to be changed. Buffer zones for molting geese is set at 2/3 of a mile. One thousand feet is enough. Travel restrictions (for caribou) of four convoys and one flight daily and no surface facilities in the Teshekpuk Lake area are unnecessary given the Prudhoe experience of booming herds. Scientific studies show properly spaced roads and pipelines don't bother the animals. 001 002

I Oppose all creations of new "Special Areas." Special Areas (SAs) are functional buffer zones. On other BLM lands, SAs are often associated with
Areas of Critical Environmental Concern (ACECs), which are in essence administrative wilderness areas. ACECs often carry no-surface-occupancy stipulations, as well as many other stringent restrictions on use and access.

I support mitigation only through scientifically defensible measures. I do not support any type of restrictive land designations. Full protection of habitat can be achieved through site-specific measures and compliance with existing laws.
There is absolutely no scientific data to support the need to lock the whole sucker up!

I oppose the Wild and Scenic and wilderness designations. This action to support the value of primitive, remote scenery. Alaska already has 57 million acres of federal wilderness (about 23% of the state) for Greens to play in. What about a place for others to work and enjoy the economic benefits?

Presently the advances in technology have reduced the "footprint" of oil operations by 80% from 1970. And, as technology further advances the
"footprint " of oil operations will be further reduced.

Oil is a major supporter of the Alaskan economy, while also helping
America's energy security. Imports are currently at 49% of the total, which is expected to increase to 68% by 2015. The more we can produce ourselves, the less worry over another foreign flare-up for our troops to put out.

Sincerely

Rachel Thomas

PEOPLE FOR THE USA
RACHEL THOMAS
PRESIDENT, SOUTHEAST ARIZONA CHAPTER

0713-001
Alternatives A through E Stipulation 25 is one of several that resulted from a workshop of scientists to address possible mitigation measures to the impacts of petroleum development on caribou and waterfowl. This stipulation has been dropped in the Preferred Alternative given that the Preferred Alternative would not allow leasing in the sensitive goose-molting area.

0713-002
Stipulations related to ground transportation and aircraft restrictions outlined in the draft EIS for Alternatives A through E were developed at a cooperative workshop of Federal, State, and local experts to mitigate the impacts of petroleum development on caribou in key areas near Teshekpuk Lake. Under the Preferred Alternative, although oil and gas leasing is allowed, no exploration or development surface occupancy is allowed in traditional caribou habitat to the south, east, and west of Teshekpuk Lake. (Fig II.C.1-1). Ground transportation and aircraft stipulations consequently have been modified to reflect these changes. Preferred Alternative Stipulation 34 requires a minimum 500-ft separation, if feasible, between roads and pipelines.

0851

NATIVE VILLAGE OF BARROW
INUPIAT TRADITIONAL GOVERNMENT

February 11, 1998

Native Village of Barrow, Traditional Governments' NPR-A revised Comments on the DEIS

Native Village Barrow (hereafter NVB) Tribal government's 1998 NPRA disclosure to Bureau of land Management's Draft EIS regarding the northwest corner of the NPRA.

Aboriginal Inupiat ancestral land known as NPRA was withdrawn from the Public Lands in the northern Territory of Alaska. Inupiat people used old Meade River coal mine for energy by mining the coal and bringing it to Barrow. Traditionally, Inupiat hunters, trappers, and subsistence fishers from Barrow historically have traveled from Barrow to Sagavanirktok River to sustain their subsistence harvest nutritionally and economically through trapping foxes, wolverines, and wolves. Historical trips to Kivalina and Noatak area were made by dog team and umiaks.

NVB's lands was the primary foundation in the incorporation of NVB in 1940 under the Indian Reorganization Act of 1934, amended for Alaskans in 1936. The population of the NVB was increased from centralization of many small communities through out the Arctic Slope. Residents from the Ikpikpuk, Teshekpuk, Cape Simpson, Cape Halkett, Olitkok, Prudhoe Bay and many other settlements have resettled to educate their children when the BIA school opened in Barrow.

Since the incorporation of NVB in the 1940's, BIA conducted a village meeting to designate an Indian or Inupiat Reservation for NVB. The proposal by BIA was not sufficient with a proposed ten mile boundary (depicted on page 1-14 of NPR VALUES & RESOURCE ANALYSIS Volume 1, Sections 1-2 of the 105(c) study on the National Petroleum Reserve in Alaska, by the Department of the Interior in 1978), as it would not sustain the livelihood of the community economically or nutritionally. Finally, Department of the Interior through BIA did a feasibility study on the proposed Reservation PLO 324 whether it would sustain the livelihood of the natives economically or nutritionally. It was deem not suitable to sustain the natives because the boundary was too small.

In 1971, Arctic Slope Native Association voted against the ANSCA land claim, because the ANSCA did not address the lands issues of the Arctic Slope Natives. The Edwardson versus Morton lawsuit is an unresolved litigation by the Inupiat people to resolve the proprietary issues of land in the Arctic Slope of Alaska. Arctic National Wildlife Refuge is another example of unresolved land claims forbidding Inupiat Natives of their right to economic opportunity for their membership. The land issues must be resolved in favor of some economic benefit for the Inupiat people including some royalties within NPRA for closing the ANWR land claim by the Arctic Slope Regional Corporation.

NVB petitions the BLM to return all ancestral lands within the Village be conveyed to the NVB including but limited to the PHS Hospital property, the BIA old school, Weather Bureau lands, existing Distant Early Warning Sites (DEW Line Sites) and BIA held properties in Barrow. DEWLine sites included POW MAIN (in Barrow), POW-A (Vicinity of Barrow) and LIZ C(vicinity of Barrow). These DEWLine Sites are in the immediate hunting areas of NVB. The unresolved Reservation land for NVB is attached as part of

P.O. Box 1130 • Barrow, Alaska 99723 • Phone: (907) 852-4411 or 1-800-478-4412 • Fax: (907) 852-8844

the NVB testimony for the DEIS statement of NPRA Integrated planning Strategy by BLM for the Federal Government of the United States. The proposed Reservation boundary was not the desired boundaries for our Village. It documents the existing unresolved lands issues by the Inupiat people with the Federal government. NVB participated in the incorporation of the Inupiat Community of the Arctic Slope, IRA a regional IRA Tribal government to better incorporate the necessary boundary to sustain the economy, nutritional and subsistence needs of the Arctic Inupiat people.

NVB do not want any designation of all areas of the NPRA lands which will alter the existing subsistence hunting rights of the Inupiat People for cultural subsistence hunting, fishing, and trapping livelihood. The NPRA is the seasonal hunting area of the Inupiat people of the Arctic Slope of Alaska. Any designation will have detrimental impact on human consumption of renewable resources by setting obstruction and displacement of these harvestable resources from their known habitat areas by other users inconsistent with local subsistence activities. 001

NVB subsistence areas are the Ikpikpuk River, Teshekpuk Lake, Mayugiaq River, eastern coastline of Smith Bay including to Lonely for Caribou. The lands around the eastern Teshekpuk Lake to Barrow is the Geese hunting areas.

Impact funds for communities must be established for each community for cumulative impacts such as public services, social problems as alcohol, hunting, wildlife management and staging areas for support management, Etc. Sand and Gravel rights be given to ANSCA Corporations to initiate joint working relations with any oil and gas development. 002 003

A provision to grant residual rights of all non-commercial quantities of oil and gas to local ANSCA corporations. This plan with a small refinery can sustain the local energy needs of the Inupiat people and it will last the local governments for at least 20 - 80 years! 004

The Reindeer Husbandry program should be planned and supported by BLM within the PL93-638 co-management compact for wildlife management for Arctic Slope. Relocate the Musk Ox in a cooperation agreement with Native Village of Mekoryuk on Nunavak Island (ANSCA lands of the Village) in the Bering Sea. This will alleviate and resolve conflicts associated with industrial development directly with the subsistence hunters. 005 006

The federal government should establish a permanent fund to sustain the economy of the Inupiat Community of the Arctic Slope, IRA and its member villages even when the Oil and Gas development has been depleted on the Arctic Slope lands. 007

The NVB anticipates a 150% (one hundred fifty percent) increase for their PL-93-638 contract services to sustain additional expenses from impacts related to oil and gas development. A cost of living allowance must be automatically be added to all existing and coming PL93-638 contracts same as all federal agencies in Juneau, Fairbanks, and Anchorage, Alaska. 008

The issue of subsistence hunting, fishing, and trapping CABINS within NPRA are the Inupiat traditional home away from home during harvesting seasons for their nutritional, clothing, cultural, and economic needs. Public law 93-638 Co-Management contract is necessary to have good mitigation policy between Industry and the Arctic residence of the Arctic Slope. The Alaska Eskimo Whaling Commission is a representation model that BLM should PL93-638 contract the Wildlife issues to the ICAS. 009

Native Village of Barrow requests the BLM to positively resolve all Kuukpik Corporation and Arctic Slope Regional Corporation's land entitlements. Furthermore, NVB supports on land oil and gas development 010

In support of the Alaska Eskimo Whaling Commission's Bowhead Whaling management of a protected species. This support requires an utmost care to sensitive tundra environment for our renewable subsistence resources within the NPRA development plan.

NVB appreciates its opportunity to submit its comments on the NPRA development program by the federal government through the BLM.[12]

Arnold Brower Jr.

SUBMITTED BY: Arnold Brower Jr., President
Approved context by the Tribal Council on January 22, 1998

cc: files
attachments (chronology of NVB)

2

0851-001
The Preferred Alternative has been crafted to minimize impacts on subsistence users. It includes no land designations which might conflict with subsistence activities. Moreover, it will keep oil and gas surface development out of nearly all the primary caribou calving habitat and along important subsistence use areas, such as Fish and Judy creeks, the Colville, Ikpikpuk, and Miguakiak rivers, and along Smith Bay and Teshekpuk Lake. Preferred Alternative stipulation 60 forbids oil and gas lessees from unreasonably restricting subsistence users' access to oil field development areas. In addition, lessees are required by Preferred Alternative stipulation 61 to, among other things, consult with local communities and the Subsistence Advisory Panel to discuss potential conflicts between oil and gas exploration and development and subsistence activities, and to report to BLM all concerns expressed by subsistence users and the steps the company has taken to address the concerns.

0851-002
Please see Response 1669-017.

0851-003
Sand and gravel in the NPR-A are not available for conveyance to ANSCA Corporations. Disposition of sand and gravel resources is governed by the Mineral Materials Act, 30 U.S.C.§§ 601-615. (See 42 U.S.C. § 6502(1) and (2)). Alaska Native corporations receive sand and gravel resources associated with lands conveyed to them pursuant to ANCSA as part of their subsurface entitlement.

0851-004
Oil and gas resources of the NPR-A may be leased only in accordance with the requirements of the NPRPA, 42 U.S.C.§ 6508, including utilizing the competitive bidding systems in the Outer Continental Shelf Lands Act, 43 U.S.C. § 1337(a)(1)(A)-(H). The disposition of residual oil and gas to Alaska Native corporations would require an act of Congress.

0851-005
Please refer to Section I.A.

Section 12 of the Act of September 1, 1937 (50 Stat. 902) provides BLM the authority to administer a reindeer grazing program in Alaska. The Act authorizes the Secretary of the Interior to promulgate such rules and regulations as, in his judgment, are necessary to carry into effect the provisions of this Act. These rules and regulations are in 43 C.F.R., Subpart 4300. Subpart 4310.0 states in part "Where these lands are within the natural migration routes of caribou, or when they have other important wildlife values, the lands may be. included in a permit, at the discretion of the authorized officer after consultation wit the Alaska Department of Fish and Game, ..."

0851-006
Currently, there is a limited occurrence of muskoxen in the planning area (Section III.B.5.a(2)). To date, no connection has been established concerning potential conflicts between subsistence hunters and industrial development relating to muskoxen.

0851-007
Please see Response 1669-017.

The BLM does not have authority to establish a permanent fund for the ICAS.

0851-008
The BLM does not have contracts under P.L. 93-638 with the NVB.

3

0851-009
Please see Response 0039-007.

0851-010
Once BLM receives Kuukpik Corporation's identification of lands they wish to select, we will begin work on conveyance of Kuukpik and ASRC's land entitlements.

0907

From: Paul C. Rusanowski
To: 'gterland@ak.blm.gov' <gterland@ak.blm.gov>
Date: Mon, Feb 23, 1998 11:08 am
Subject: NPR-A DEIS comments

After review of the DEIS I am convinced that alternative E should be the = preferred alternative. The BLM has done an excellent job of balancing = resources in the NPR-A with responsible and workable stipulations. =
There is no need to compromise the opportunity for commercial oil and = gas discoveries by excluding highly prospective lands from exploration = due to environmental concerns. With the stipulations in place ther is no = need to place any land restrictions on the proposed lease sale. =20

However, I would suggest you consider one stipulation to be in place = within areas that would be placed off limits to exploration in = alternative B. That is, that lands potentially withdrawn from = exploration under alternative B should be included for lease under = alternative E, with the stipulation that the oil and gas companies post = a bond prior to exploration on those lands to cover any potential that = might exist for environmental damage. If the exploration plan has = mufficient safeguards in it that, in the opinion of the BLM, there is = negligible potential risk, then the bond requirement could be waived. I = think this provision would provide enough assurance that the job would = be done right under all circumstances, and alternative E would be the = best choice for the federal government, the state of Alaska, and the = citizens of the US. 001

Thank you for providing the opportunity to comment on this DEIS.

Sincerely,

Paul C. Rusanowski, Ph.D.

0907-001
The BLM has mandatory bonding regulations in place for any geophysical exploration work (43 CFR 3154.1) and lease development work (43 CFR 3134.1 and other citations noted therein). There is no regulatory provision for waiving such bonding requirements under any circumstances. Further, the Alaska Oil and Gas Conservation Commission requires posting of an additional mandatory bond with them for any oil and gas well drilled.

My Comments on the Draft Environmental Impact Statement for the Northeast NPR-A Integrated Activity Plan

0955

The BLM needs your comments on proposed future management of the Northeastern Area of the National Petroleum Reserve in Alaska, as well as any information you have that would correct errors or omissions in the description of the affected environment or the impacts to it as stated in the DEIS. Send this form or a letter to the address on the back by March 12, 1998. You may also make comments by Internet at http://aurora.ak.blm.gov/nprA.

Privacy Note: Comments, including names and street addresses of respondents, will be available for public review at the Fairbanks BLM office during regular business hours (7:45 a.m. to 4:30 p.m. Monday through Friday, except holidays) and may be published as part of the Final Environmental Impact Statement. You may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Your input is very important to the members of the team because they want to be sure everyone has a voice in the decision.

☒ **It is OK to release my name and street address to the public with these comments.**

☐ **I do not want my name and street address released to the public with these comments.**

Any drilling done on the slope affects all on the Village, no matter how close or far any drilling is done from a Village. Subsistence is our priority!! 001
#1. Companies who are trying to get permits, need to guarantee that any spills will be cleaned up as soon as possible with the best kind of equipment possible. 002 The Inupiat people of Nuiqsut, Atqasuk, North Slope Borough, Barrow, Anaktuvuk Pass, Kaktovik, Wainwright and Point Hope should be "heard" with respect and BLM should follow through what is being said from each and every public hearing!

Name (please print) City of WAINWRIGHT Date: 2-9-98
Street address or P.O. Box Box 9
City, State, Zip Code WAINWRIGHT, AK 99782
I represent City of WAINWRIGHT

☒ I want to be added to the BLM's NPR-A mailing list.

0955-001
The comment is addressed in Preferred Alternative Stipulations 6 through 17.

0955-002
Please see Response 1670-006.

1000

CITY OF VALDEZ, ALASKA

RESOLUTION NO. 98-15

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF VALDEZ, ALASKA, SUPPORTING THE OPENING OF THE NATIONAL PETROLEUM RESERVE-ALASKA FOR OIL AND GAS LEASING

WHEREAS, it is important to the economy of the State and the City of Valdez that new oil and gas fields be found and developed; and

WHEREAS, in 1995, more than 46 percent of the oil used in the United States was imported; and

WHEREAS, it is vitel to the future energy security of the United States to find and develop new oil and gas fields; and

WHEREAS, the Bureau of Land Management has released a Draft Environmental Impact Statement (DEIS) on whether the National Petroleum Reserve-Alaska should be reopened to oil and gas leasing; and

WHEREAS, the DEIS outlines five alternatives ranging from no leasing to leasing 100 percent of the Planning Area; and

WHEREAS, Congress has stipulated that oil exploration and development will be the dominant use of the National Petroleum Reserve-Alaska and authorized the U.S. Department of Interior to mitigate any adverse environmental impacts while allowing reasonable development to proceed; and

WHEREAS, new advances, such as extended-reach drilling end smaller areas required for production pads have greatly reduced the industry's footprint on the environment; and

WHEREAS, it is important to find and develop new oilfields for the nation's future energy security and to sustain the Alaska economy in the face of declining oil production in the Prudhoe and Kuparuk River fields.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF VALDEZ, ALASKA, that:

Section 1. The City of Valdez supports Alternative E of the DEIS which will allow full leasing of high potential areas in the National Petroleum Reserve-Alaska with the exception of the creation of new "Special Areas", as well as the expansion of existing "Special Areas".

Section 2. The City of Valdez opposes the designation of federal Wilderness and Wild and Scenic Rivers within the National Petroleum Reserve-Alaska.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF VALDEZ, ALASKA, this 17th day of February, 1998.

CITY OF VALDEZ, ALASKA

Dave C. Cobb, Mayor

ATTEST:

Sheri L. Caples, CMC, City Clerk

1155

KONIAG
INCORPORATED

March 2, 1998

Gene Terland, NPR-A Project Coordinator
Bureau of Land Management (930)
Alaska State Office
222 West 7th Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland,

This is being written on behalf of Koniag, Inc. the Regional Native Corporation for Kodiak. Koniag wishes to render its considered viewpoint that development of NPR-A as expressed in the DEIS alternative "E" would be best for both the people of Alaska and the Nation as a whole.

- We believe that the "full development", alternative "E", can be administered by BLM under current administrative authorities without any significant detriment to the environmental and such other values as may exist.
- The NPR-A area proposed to be opened is less than 20% of the whole. It is not virgin wilderness but, in fact, has been subjected to past explorations in the 1940s and '50s and again in the '70s and '80s pursuant to its 1923 withdrawal as a Naval Petroleum Reserve.
- "Special areas" to be singled out for extra protections are unnecessary and ignore the very significant technological improvements made over the past 20 years or so by the oil and gas industry. Any mitigation and special stipulations should pass the test of reasonableness and should be supported by bonafide scientific studies.
- BLM should move forward quickly with a lease sale in 1998. As other reserves dwindle it is important to Alaska to keep new discoveries coming on line.

4300 B Street, Suite 407
Anchorage, Alaska 99503
(907) 561-2668
FAX (907) 562-3208

Some of our shareholders are directly employed in the oil and gas industry. Koniag and its shareholders as a whole have an important stake in the energy business and will prosper as the Alaskan economy prospers. We do not believe that negative environmental viewpoints should be given great weight in making this decision. Their "chicken-little" predictions have seldom been accurate in the past.

Thank you for reading this far and for the opportunity to comment.

Sincerely,
KONIAG, INC.

Uwe Gross,
CEO

1164

From:
To: ilmakcso.ilmakdsl(gterland)
Date: Thu, Feb 26, 1998 11:23 am
Subject: NPRA

Mr. Yerland:
I have been reading the NPRA proposal, and in particular the references, and find that there are many reports that would seem to be quite pertinent to this initiative that are not liated. I conducted a survey of natural landmark areas for the National Park Service in the mid-1970s, and described in detail many sites falling within the proposed NPRA area. You might look at the University of Alaska library as I am sure there were copies placed there and at the old NARL at Barrow. Fairly good detail on the ecological and topographic features of the area were given in that report. Feel free to contact me if you want to discuss this further. John Xoranda, retired Univ. of California biologist, An interesting project....JJK 001

1164-001
The reference has been added to Section III.B.1 under the description of the Colville River Special Area.

1187

Charles R. Statum
527 7th Ave W.
Columbia Falls, Mt 59912
chuck@bigsky.net
a private citizen; myself

the total removal of the BLM and any other federal agency from this opperation and leave it totally up to the State of Alaska. 001

It is OK to release my name and street address to the public with these comments.

Entered on: 2/24/98

1187-001
Executive Order 3797, dated February 27, 1923, reserved in Federal ownership 23.7 million acres, which later became known as the NPR-A, as a result of the National Petroleum Reserves Production Act of 1976 (P.L. 94-258). The later act allowed the selection and conveyance of lands to the village corporations under ANCSA, but closed the NPR-A to all other forms of appropriations under the public land laws. Therefore, this operation must remain Federal. We have had close coordination and involvement of the State of Alaska in this effort.

1194

6 March 1998

NPR-A Planning Team
Bureau of Land Management
Alaska State Office
222 W. 7th Avenue, #13
Anchorage, AK 99513-7599

Dear Planners:

I write to provide a general evaluation of the Northeast National Petroleum Reserve-Alaska Draft Integrated Activity/Environmental Impact Statement and to offer specific recommendations to strengthen provisions for safeguarding the natural environment in the event that oil and gas leases are permitted. I do so from the perspective of a professional biologist who has had personal experience in the petroleum reserve since 1952, having worked there for 13 summers, most recently in 1989. Much of my work involved research on birds of prey and microtine rodents in what is now called the "Colville River Special Area." In addition, I am quite familiar with the work of several colleagues who have spent even more time in the reserve than I have, as well as with the entire program of research formerly carried out under the old Naval Arctic Research Laboratory at Barrow, little of which, I note, has been referenced in your analysis of the environment.

The first point to emphasize is that the DEIS does not convey anything close to an adequate evaluation of the truly unique ecological and biological features of the reserve, particularly of the Colville River Special Area. Although the general section III on "Descriptions of the Environment" and IIIB on "Biological Resources" provide a wealth of more or less adequately documented detail on the surface features, fauna, and flora and other "surface values" (paleontological, archaeological, scenic), nowhere does the document attempt to evaluate the importance of this region by comparing it to any other part of Alaska or to the circumpolar arctic zone. It needs to be emphasized that the reserve lies in the northernmost part of the North American continental land mass, much of it above 70° N lat., and that it encompasses the largest stretch of low-lying, arctic, coastal plain tundra and foothill tundra in Alaska, if not in all of North America. Despite some surface disturbance by the old Arctic Contractors, U. S. Geological Survey, and more recent explorations by private oil companies, the region has remained *de facto* wilderness ever since it first became a Naval Petroleum Reserve in the 1920s.

While the Arctic National Wildlife Refuge, Gates of the Arctic National Park, and the Noatak National Preserve adequately protect representative and viable examples of the montane and higher foothills environments and biotic zones of arctic Alaska, nowhere is there a preserve for the rolling, northern foothill tundra and wet tundra of the coastal plain, except for a narrow and unrepresentative portion of ANWR. Until now, the

001

petroleum reserve has functioned as a surrogate protector of these unique biotic communities.

Now, the likely commercial development of the oil and gas reserves is cause for the Nation to reconsider the relative value of the biosphere on the surface compared to the value of the oil underneath. This DEIS needs to emphasize far more than it has done that long after the limited oil and gas reserves have been used up, the surface resources and values will remain, and the protection of these values—especially the renewable natural resources from harmful influences during the brief period of petroleum development is of far greater long term interest to the Nation than any short term gain from the oil. Now is the time to develop a long range, comprehensive management plan for the entire reserve, based on sound scientific facts and principles, rather than react to short-sighted political and economic interests with piecemeal plans to open up specific sections of the reserve to commercial production, one at a time over the next decades.

While my emphasis here is on the Colville River and the foothill tundra, it should be noted that the arctic coastal plain ranks as one of the most pristine, biotically rich wetland environments remaining in North America, comparable in importance to the Yukon Delta National Wildlife Refuge in western Alaska and the Everglades National Park in Florida. In short, the entire reserve is a "special area" and should be so treated. For that reason, the Secretary of the Interior should use his authority to provide a new regulatory designation that recognizes the surface features and resources as at least equal in value to the underground oil reserves. That parity could be recognized by renaming the reserve the "Alaska Tundra Biome Reserve" or the Arctic Tundra Biome Reserve."

The Colville River Special Area was originally designated to emphasize protection of the exceptional ecological community of arctic birds of prey—particularly the Peregrine Falcons—that nest on the cliffs and bluffs of the Colville River. The DEIS does not convey an adequate evaluation of the outstanding ecological importance of the Colville River Special Area (see Koranda and Evans 1975, Ozenoff et al. 1989). Since the early 1950s the Colville River system has been recognized as one of the most significant regional habitats for raptors in North America (Kessel and Cade 1956, 1958, Cade 1960, White and Cade 1971). In every respect it is comparable in importance to the Snake River Birds of Prey National Conservation Area in Idaho. As noted in the DEIS, on the main river alone there are some 60 nesting pairs of Peregrine Falcons, 10-30 pairs of Gyrfalcons (found nesting in no other state of the union), more than 100 pairs of Rough-legged Hawks, all nesting on cliffs along with Ravens, Canada Geese, and an occasional pair of Golden Eagles and Merlins. About half of all these pairs west in the region of NPR-A under consideration for oil and gas leases. In addition, the upper Ikpikpuk River and tributaries have an estimated 10-20 pairs of Peregrines and an equal number of Rough-legged Hawks, while a survey conducted in 1997 revealed an astounding 29 pairs of Peregrines nesting in a limited geographic area along the Kikiakrorak and Kogosukruk rivers, one of the densest concentrations of nesting falcons in the entire circumpolar Arctic. These Peregrines have only recently returned to this area following the DDT-induced population decline of the 1970s, and it would be shamefully irresponsible and immoral to allow these

001

002

birds to become threatened again after such a spectacular recovery from the effects of pesticides. 002

There are two main reasons for the diversity and abundance of nesting raptors in the Colville region. One is the frequent occurrence and wide distribution of suitable nesting sites on the many rocky cliffs and earthen bluffs formed by erosion along the watercourses flowing through the foothills and upland tundra of the Arctic Slope, first noted by geologists in the 1920s (Smith and Mertie 1950). The other is the variety and abundance of prey species associated with the river valleys and adjacent tundra. These prey range from ducks and geese, ptarmigan, a variety of shorebirds and songbirds, to mammals such as the arctic ground squirrel, five species of microtine rodents, the most important members of the terrestrial mammal fauna from the standpoint of ecosystem functions (not mentioned at all in the DEIS), and the snowshoe hare, only recently established in the tall willow habitat of the Colville valley, a remarkable range extension from the spruce forest south of the Brooks Range, the ecological consequences of which are yet to be realized but which could be profound. 003

Nowhere else in the arctic regions of North America, if not in the entire circumpolar Arctic, can birds of prey find such a favorable juxtaposition of abundant nest-sites and diversity and abundance of prey species. This is the reason why the Colville River Special Area is truly special. There are other reasons too, such as the diversity of the songbird fauna, some 20 species which include unusual Asiatics (Arctic Warbler, Yellow Wagtail, Red-spotted Bluethroat), several neotropical migrants, and the rare Northern Shrike; but the raptors alone fully justify permanent protection of this riparian biotic community from harmful human activities. 004

The adoption of "LUEAs" as zones of management emphasis that are superimposed on the "Special Areas" is confusing, potentially deceptive, and unnecessary. As the DEIS notes, LUEAs are not based on any administrative, legislative, or regulatory authority. Management decisions based on LUEAs can be changed at any time by simple administrative decision. Any restrictions, rules, or stipulations to safeguard the surface resources from the adverse effects of oil development that apply specifically to areas referred to as LUEAs should be established by regulation and should become an integral part of the overall management authority for Special Areas and should not be considered as separate administrative entities. 005

Additional Special Areas need to be designated, as indicated in the DEIS. Specifically the Kogosukruk and Kikiakrorak river valleys should be added to the Colville River Special Area, because of the high nesting density of Peregrine Falcons on those rivers. The same is true for the proposed Ikpikpuk River Special Area, which should be extended to include its upper tributaries, Maybe Creek and the Kigalik River, again because of concentrations of nesting falcons and hawks. Additionally, the Ikpikpuk River is habitat for what may be the northernmost population of moose.

As to the proposed alternatives, obviously Alternative A would be best for the long term conservation of all the resources, both those on the surface and those underground. The American people understand that the national interest would be best served by leaving the oil reserves in the ground until they are truly needed 50-100 years from now. There is no current shortage of oil in the world market. Current domestic and foreign production is more than adequate to meet U.S. and world needs for petroleum. The only reasons for developing fields in NPR-A at this time are political and economic concerns related to the local Alaskan economy and the short term profit motivation of oil companies with vested infrastructure in North Slope Oil production. These reasons do not qualify as national interests that the federal government is charged to consider in carrying out the statutory mandate of the Naval Petroleum Reserve Production Act of 1976. A truly responsible and conservative political approach would be to keep the petroleum reserve as a hedge against some future, critical shortage of oil. 006

Given the current "political realities" in Alaska, it is obvious that the only alternatives that will be given serious consideration are those that provide for oil and gas leases in the reserve (B-E). None of these is an acceptable alternative in regard to conservation of the unique surface values of the reserve, but Alternative B comes closest. Alternative B could be modified to make it the "preferred alternative" by adopting the following changes, restrictions, and modifications of the stipulations:

(1) There should be buffer zones or setbacks corresponding to (a) the existing boundary of the Colville River Special Area on the left limit of the river and (b) a minimum of two miles on both sides of the Ikpikpuk, Kikiakrorak, and Kogosukruk rivers, where the only permissible surface activities would be wintertime exploratory drilling on icepads and limited construction of pipelines (see below). Otherwise, no buildings or other infrastructure related to oil extraction should be allowed. Leases within these zones might be permitted on a case by case basis if proven reserves underlying them can be tapped by extended-reach drilling from sites outside their borders. 007

(2) Pipelines should not parallel river beds or run along the tops of cliffs and bluffs fronting on a river. Any pipeline crossings should be perpendicular to the river bed, and crossings should be restricted to an area within three miles of Umiat, or located downriver from Ocean Point, so that none of them impact cliff formations. 008

(3) Stipulation 20b in the DEIS should be changed to read that "Motorized ground vehicles are to remain at least one mile from known raptor nest sites during the breeding season." A half mile limit is too close to be certain that traffic will not disturb nesting raptors that are not habituated to such activity. (One of the weaknesses of the DEIS is that it does not contain any reference to studies on the impact of disturbance from ground and air vehicles on nesting raptors. This literature is fairly extensive and readily available from the Raptor Research and Technical Assistance Center located at Boise State University, Idaho, web site http://www.iris.idbsu.edu.) 009

(4) Stipulation 57 should be changed to read that "Aircraft will maintain an altitude of 1,500 feet AGL when within one mile of all cliffs and bluffs within the Colville, Kogosukruk, Kikiakrorak, and Ikpikpuk river valleys from March 15 to August 15, unless doing so would endanger human life or violate safe flying practices." This modification is needed because the location of "nest sites" per se usually is not known to pilots, and nests are not easily identified by untrained personnel from the air, and because Ravens and Gyrfalcons begin breeding by the middle of March. Also, the final EIS needs to state how BLM will monitor and enforce this rule. 010

(5) In order to maintain the essential wilderness character of the region, no permanent roads or human habitations should be constructed anywhere in NPR-A, except where existing infrastructure already exists at Umiat, Alaska. In particular, no permanent road should allow access to and from centers of human population outside the reserve. Roads and buildings needed for human use during development and production should be removed on termination of the project. The new ARCO Alpine field in the delta of the Colville could serve as a model for the development of fields within NPR-A, if it is true, as stated in the DEIS, that this field will be served only by a winter ice-road. The abominable network of gravel roads that now exist in the Prudhoe Bay and Kuparuk oil fields must never be allowed to develop in the NPR-A. This restriction is paramount for preserving the surface values of the region as they have been historically. 011

(6) There should be no public airstrips or airparks or other recreational facilities, as proposed in the DEIS, that would add inducements for increased public use of the reserve. Existing facilities at Umiat are adequate for private air traffic. Public access to the reserve should remain as it has been for the past 60 years and more—by bush planes landing on water, ice, ridge tops, or gravel bars, or even better, by dog teams and sleds in winter and by backpacking over the Brooks Range in summer.

(7) Although the proposals to designate the Colville as a "wild and scenic river" and to create a "bird conservation area" sound appealing to conservationists, I believe these ideas are likely to be deceptive. There is little likelihood that either will happen, neither provides much substantive protection to the river and its biotic community, and if they were to come about, the impacts of increased public attraction to the river that they would cause would likely outweigh any benefits. One only needs to look at what has happened to the Noatak River to see the bad effects of increased public recreational use.

(8) The federal government needs to bite the bullet and do something to regulate "subsistence hunting" and the use of snowmobiles and other machine-driven vehicles by private individuals using the reserve. This consideration should be part of a long range management plan for the entire reserve. 012

(9) The legal designation of the reserve should be changed to provide first priority to protection of the unique "surface values" and renewable resources of the region and secondary priority to extraction of the limited and depletable petroleum reserves under ground. It could be renamed the "Alaska Tundra Biome Reserve" to reflect this emphasis. 013

If these restrictions and changes are promulgated and enforced by the Department of the Interior, there is reason to believe that commercial development of the oil in NPR-A can proceed without major impacts on the birds of prey, other wildlife, and surface values of this incomparable natural region. It can be done if BLM and the Department of the Interior have the moral courage to invoke the protective language in the Naval Petroleum Reserve Production Act of 1976 to its maximum extent and to plan creatively, now, for the future of the reserve after the relatively brief period of petroleum extraction is over.

Sincerely yours,

Tom J. Cade
Professor Emeritus
Cornell University

References:

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White, C. M., and T. J. Cade. 1971. Cliff-nesting raptors and ravens along the Colville River in arctic Alaska. The Living Bird 10:107-150.

1194-001
The NPR-A does contain a significant portion of the "low-lying arctic coastal plain tundra and foothill tundra" found in North America. Language has been added to Section III.A.1.b. One purpose of the IAP/EIS is to ensure that if oil and gas development occurs in a portion of the planning unit, the impacts to the surface resource values will be minor or mitigated to the extent possible.

1194-002
The BLM agrees that the Colville River Special Area has outstanding resource values. As the commenter stated, the bluff and riparian habitats of the Colville River are unique both biologically and geologically in the Alaskan Arctic (Corandu and Evans, 1975). This system has been recognized since the 1950s as one of the most significant regional habitats for raptors in North America (Kessel and Cade, 1956, 1958; Cade, 1960; White and Cade, 1971). Nowbere else do raptors enjoy such a favorable juxtaposition of abundant nest sites with diverse and abundant prey. This language has been added to the IAP/EIS in Section III.B.1. The commenter also noted that 10 to 20 pairs of peregrine falcons and equal numbers of rough-legged hawks are on the upper Ikpukpuk River and its tributaries. During a survey in 1992, Bob Ritchie (Alaska Biological Resources, Inc.) observed five peregrine nests on the upper Ikpikpuk River that were within or immediately adjacent to the boundary of the current planning area. However, most of the upper Ikpikpuk River and its tributaries are outside of the planning area.

The Preferred Alternative calls for those portions of the Kikiakrorak and Kogosukruk and its tributaries that are important for nesting raptors to be added to the Colville River Special Area (Sec. II.C.1). Preferred Alternative Stipulation 56 imposes aircraft restrictions that protect raptors on the Ikpikpuk and other rivers during the nesting period.

1194-003
An understanding of the ecosystem function is fundamental to an analysis of potential effects resulting from activities discussed in the EIS. However, a detailed presentation of basic ecosystem function is beyond the scope of providing a document wherein essential information is readily accessible and discussions or analyses are readily understood by a majority of the readers. Regarding the importance of microtine rodent populations in ecosystem function, the EIS notes the effect of cycles in such populations on distribution and abundance of owls and other raptors. Effect of the proposal on rodents and other small mammals is discussed in Section IV.C.9.a.8, Effects on Other Small Rodents.

1194-004
The special characteristics of the area have been incorporated as identified in Response 1194-002. Please refer to Sections I.A and II.G and Response 1851-058.

1194-005
The term "LUEA" was used to focus emphasis on resource values that are concentrated in certain areas. In most instances, these LUEA's are contained within the already defined Special Areas; however, in some instances they are not. The intent is to take a fresh view at the planning area in our resource analysis and to tie that back to the Special Areas in the Preferred Alternative. In the Preferred Alternative, an effort is made to describe the management prescriptions for or alteration to the Special Areas that are a result of analysis and discussion of the resource values contained in the LUEA's.

1194-006
Please see Response 1851-001.

1194-007
The comment is addressed in part by Preferred Alternative Stipulation 39, which establishes a 1-mi surface occupancy setback on the Colville, Kikiakrorak, and Kogosukruk rivers. Each river is within the Colville River Raptor, Passerine, and Moose LUEA. Each river provides important habitat for surface resources. At this time, the BLM does not believe that the Colville River Special Area boundary provides a meaningful basis for limiting surface occupancy. The 1-mi surface facility setback is consistent with the FWS-recommended practice for individual nests. However, the BLM recognizes that the multiple values of the Colville River corridor area are important enough to warrant more comprehensive study.

As described in the Preferred Alternative, BLM intends to convene a workshop (similar to those conducted for caribou and geese in the Teshekpuk Lake Special Area) after the current planning process is completed. The workshop will provide technical experts an opportunity to review the extensive scientific literature on raptor disturbance and identify potential additional mitigation measures to protect raptors. The workshop will be the first step toward developing a comprehensive river-management plan for the Colville River Special Area. After the current planning process is completed, the BLM intends to initiate a cooperative river-management planning process for the Colville River Special Area. Note that the Preferred Alternative adds a 2-mi zone on either side of the Kikiakrorak and Kogosukruk rivers (including four tributaries to the south) to the Colville River Special Area.

Although the FWS does not have raptor population data for the Ikpikpuk River, Preferred Alternative Stipulation 56 expands air-traffic restrictions to include all cliffs identified as raptor nesting sites. This protection would apply if and when additional raptor nests are identified along the Ikpikpuk River. Other protection for raptors is described in Preferred Alternative Stipulations 24b and 56.

1194-008
This comment is addressed by Preferred Alternative Stipulation 39.

1194-009
Seismic activities and overland moves occur exclusively in the winter months and generally avoid the raptor-nesting period (except for gyrfalcons). It is the opinion of FWS raptor experts that the ½-mi setback described in Preferred Alternative Stipulation 24b and Alternatives A-E Stipulation 20b are sufficient to protect isolated nests and nests in high-density areas. Side-by-side nests in concentrated nesting areas will in many instances expand protection for individual nests. Activities of specific concern near raptor-nesting sites, particularly selection of travel routes, can be addressed through consultation with the FWS during the permit-review process. Please see also Response 1194-007.

1194-010
Experts from the FWS believe that the ½-mi flight restriction described in Preferred Alternative Stipulation 56 and Alternatives A-E Stipulation 56 is sufficient to protect isolated nests and nests in high-density areas. Side-by-side nests in concentrated nesting areas, in many instances, will expand protection for individual nests. Specific concerns about activities and loud noises from road construction or pipeline crossings near raptor-nesting sites can be addressed through consultation with the FWS on a site-specific basis. Please see Preferred Alternative Stipulation 39. Please see also Response 1194-007.

The BLM, in consultation with appropriate Federal, State, and NSB regulatory and resource agencies, intends to enforce all stipulations and permit provisions in the planning area. The BLM has a formal enforcement and inspections program and conducts inspections at the field level. Inspections include all aspects of a leasehold operation for compliance with Federal laws and regulations, BLM policies, lease stipulations, and permit conditions, except those laws, policies, or permit conditions under the exclusive jurisdiction of another Federal agency. Given the size of the planning area, enforcing air-traffic restrictions is somewhat problematic. However, BLM rangers regularly patrol and monitor activities in the field and work and cooperate with other Federal, State, and NSB regulatory and resource agencies, local communities, and industry to ensure full compliance with all laws, regulations, policies, lease stipulations, and permit requirements. Enforcement may carry both civil and criminal penalties, depending on the nature of the violation. Other Federal, State, and local government agencies with primary enforcement authority for specific permit conditions will monitor and enforce compliance independent of BLM.

1194-011
The comment is addressed in Preferred Alternative Stipulations 48 and 58.

1194-012
Title VIII of ANILCA provides for "the customary and traditional uses by rural Alaska residents of wild, renewable resources. . . ." Subsistence on Federal lands currently is regulated by the Federal Subsistence Board. Based on the law and court cases, the use of snowmobiles and other machine-driven vehicles is determined appropriate in support of subsistence activities.

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1194-013
Please refer to Section I.A, II.G and Response 1851-058.

1246

Due to development of the east side of the Colville of Prahdoe Bay and Kuparuk fields the Colville people of Nuiqsut has been diverted to do more subsistence hunting in the called National Petroleum Reserve then any other time, and now that west side of the traditional hunting ground of Nuiqsut residents may be in jeopardy because of development of NPRA . This may be our last year of fully using the traditional subsistence hunting around the village without interference or impactment. The people of Nuiqsut realize that because of development of the Alpine Field that any discovery in NPRA will be connected pipeline wise to the Alpine field in order to deliver to the Alayeska Pipeline. If not properly constructed this will may dived traditional ways and migration paths of animals to find alternate routes, As you know in the past we the inuqsiq people move where the subsistence is abundant and now we are evaluating our places of hunt because of being practically surrounded by development and in today's society it is very impossible to move a whole town, so none of us are evaluating our lifestyle? No man or woman native or non should have ever to come to a point as we are evaluating a traditional lifestyle, because of occurrence development people have approached me and are seriously evaluating their traditional lifestyle or frustrated in fighting for their present lifestyle.

Below are few of many of the traditional subsistence places of ones throughout the years for village of Nuiqsut and I as mayor of Nuiqsut are asking and requesting that Bureau of Land Management to consider delay or displace these most important places of value of the Nuiqsut People for Lease Sales. Requesting that no permanent structures as Rigs , pump stations or pipelines be constructed because this sites are of importance to the people of Nuiqsut . 001

Nigliq Channel

The Nigliq channel has and always will be a valued river for many reasons to the Nuiqsut residents. Many of our residents and family ties have a tremendous amount of history of the Nigliq channel. It is a river that provides not only physical attachment but mental attachment of our past and present of our native people and lifestyle. This river has been used as long as we can remember as a resource of gathering and subsisting fish and caribou harvesting as well as other traditional events. The Nigliq channel has many historic places which we proudly teach our young ones of valued history of our people past

Fish Creek

Fish creek has been one of the most attractive places of subsistence fishing and hunting to the people of Nuiqsut because the resources in this river / creek have always provided for not only an individual family but most if not all the community with abundance of fish , caribou, geese ,wolverine ,wolves, and many valued sources of food and clothing. It also has historic sites at the mouth of the river and many fishing camps along the creek. Fish creek is the most frequent place of hunt for both young and old because as stated earlier the young and old were diverged to other place to hunt and this has been a more valued area of the Nuiqsut people since the Colville and Nigliq channel has seen many activities of the sport hunter and development of oil & gas.

Judy Creek

The creek has always been used during the winter seasons to hunt the important clothing for this harshest environment of the North Slope . We have learned to expand hunting areas and unique places as Judy creek it also has historic and present monuments of traditional places of hunt and practice of passing on traditional values to the younger generation.

Teshekpuk Lake

This is probably the most important lake to the people of the north slope because this is the calving ground, insect relief, feeding area and migration destination for our caribou, as you know the caribou is one of the most important food source for the inupiaq people of the north slope. Not only does the village of Nuiqsut survive of the Teshekpuk herd but many other villages depend on this herd as well. We cannot tell you in black & white writing how much this migration route of this specific animal is important to the people of the Colville. We feel that permanent structures as a oil production plant or oil well or pipelines within the Teshekpuk lake or migration route via fish creek and south east area of Teshekpuk will definatly dived this important herd to another area which would tremendously affect the North Slope inupiaq way of life.

Pg 3/3 NPRA DEIS Comments

The City is in support of the Local Native Corporation Kuukpik Corporation that no lease sales should take place until all land selections have been conveyed to the Kuukpik Corporation in the NPRA area.

The City of Nuiqsut also supports the North Slope Borough in terms of the NSB alternatives ,Consultation & Consensus . It is very vital it at this most effected community by informed and be part of the process so we can fully protect the current lifestyle of the Nuiqsut residents. We also support the Boroughs Delaying leasing areas because of high importance to the people of Nuiqsut. 002

I am pleading and demanding for my people of Nuiqsut that you work and cooperate with the people that will be most affected by this plan of action. For many years I have been attending meeting and testifying on DEIS of many Oil & Gas wells and yet to date non of my comments and concerns were not seriously considered. I seriously suggest that you work with the people of Nuiqsut and consider these suggestions so that we may continue to prosper for the people of Alaska as well for the people of the United States but most of all as Secretary Babbit stated not to divide the people from its land. 003

I Thank you in advance for considering my comments, if you have any questions or comments please write or call the address above.

Sincerely,

Leonard Lampe
City of Nuiqsut Mayor

1246-001
Your comments with regards to the importance of these areas for subsistence has been taken into consideration in development of the preferred alternative. See Preferred Alternative Stipulations 59 through 62.

1246-002
Elements of the North Slope Borough's alternative on consultation and conflict resolution are incorporated into Preferred Alternative Stipulations 61 and 62.

1246-003
Please see Response 1670-006.

1247

Sitnasuak Native Corporation

Post Office Box 905 • Nome, Alaska 99762
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March 5, 1998

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Gene Terland, NPR-A Project Coordinator
Bureau of Land Management (930)
Alaska State Office
222 West 7th Avenue
Anchorage, Alaska 99513-7599

Dear Mr. Terland,

On behalf of Sitnasuak Native Corporation, I urge the BLM to allow development of the National Petroleum Reserve - Alaska at the North Slope. Alternative E is the method which would allow oil development. The area should be open for exploration and leasing. All Alaskans, including us in western Alaska depend on oil produced at Prudhoe Bay.

One of our subsidiary corporations, Bonanza Fuel inc. is in the oil and propane business in Nome. We have first hand knowledge of use of safety procedures which protects the land and people. We know and understand that it takes wise use of land and natural resources to keep our homes, offices and communities warm.

Thank you for this opportunity to comment.

Respectfully,

Robert L. Fagerstrom
President

1313

UNITED STATES ARCTIC RESEARCH COMMISSION

Gene Terland, Planning Team Leader
NPR-A Planning Team
Bureau of Land Management
Alaska State Office (930)
222 W. 7th Avenue
Anchorage, AK 99513-7599

6 March 1998

Re: Northeast National Petroleum Reserve-Alaska: *Draft* Activity Plan/Environmental Impact Statement

Dear Sir:

The U.S. Arctic Research Commission has reviewed the referenced Plan/EIS Statement. The Commission is concerned that it appears that the Plan/EIS fails to use the results of relevant, peer-reviewed, high quality research conducted by other agencies, industrial and academic researchers in completing the EIS. A discussion of our specific concerns follows. 001

The Commission believes that many sources of knowledge of Arctic ecosystems, several of which were the results of substantial research efforts, have been overlooked in the preparation of the report. The same appears also to have occurred with the peer-reviewed literature that resulted from industry sponsored research. We suggest that the BLM examine the recommendations presented in the Commission's report ***Improvements to the Scientific Content of the Environmental Impact Statement Process, Issue No. 4, December 1989***. These recommendations remain valid. Key among the Commission's recommendations was a call for a broad approach to scientific issues and the use of impartial external reviewers in the various stages of EIS development. We emphasize the comment on page 5 of this report concerning the need for long-term data sets, study of the gray literature, and the lack of peer review as well as the statement on p.6 that "In a number of agencies the science that goes into an EIS is seldom critically reviewed..."

A specific area of concern is the section on biotic resources. Certainly the information about various fish and game resources, and about the habitats in which they live is well-done and complete, but a recent publication contains new information. (See Landers, D.H. and S.J. Christie (eds). 1995. Ecological effects of arctic airborne contaminants. Special Issue of *The Science of the Total Environment*, vol. 160, 161. Elsevier, 870 pp.) However, we also read (p. I-1) that, "the BLM manages its Alaska lands and their uses to ensure healthy and productive ecosystems..." From this perspective, which takes into consideration habitats as a part of a larger system, all of the factors that presently or potentially affect the ecosystem should be a part of the analysis. There is presently a lack of an ecosystem perspective in the information about freshwater and terrestrial biology. 002

We suggest that another important focus missing from the document is an analysis of the changes that are now beginning to occur on the North Slope caused by a warming of the regional climate. The published evidence includes: NOAA data showing a temperature rise over the past 30 years of 0.5 degrees per decade, disappearance of the moss vegetation from the Barrow research sites since 1974; NDBI data (a satellite-derived measure of plant biomass) showing a continuing increase on the North Slope; rising temperatures of the permafrost at Prudhoe Bay; and the increasing replacement of sedges and mosses by shrubs at the Toolik Lake Research site south of Prudhoe. The implications of these changes for habitats of importance to fish and game species include the further reduction of lake trout habitat as the upper layers of lakes warm and the spread of dwarf birch, a species that is actively shunned as a food by caribou. The effect of oil and gas development should be evaluated not only for the present ecosystems but for the changing ecosystems over the next decades. Will the vegetation vital to geese change if warming continues? Will the caribou herds change their ranges if the distribution of vegetation changes? These are important baseline changes against which impacts should be assessed. 003

A paradigm to consider is the current management system for Yellowstone National Park. The appropriate theme for the Plan/EIS should be "Managing Resources in a Changed Environment". Data and insights about the changes and effects are available from the decades of NSF and DOE-sponsored research that has been carried out at intensive sites along the TAPS road (Dalton Highway) and at Barrow. This includes the on-going research of the Arctic System Science (ARCSS) program of NSF. The plant community and climate studies at these sites are similar to those in the NPR-A and the resulting ecological understanding is transferable to sites throughout the region. Much of the research is recent but nonetheless has been reported at scientific meetings and has appeared in scientific journals. The findings of this research and the insights of the scientists carrying it out should be known by the those preparing this EIS.

The Arctic Research Commission believes that this area of active research in northern Alaska (the impact of the present warming and predictions for future impacts) must be included as an addition to the description of the natural resources and habitats. Given the rather small area proposed for development, we do not expect that this will alter the conclusions of the document. It will, however, make use of state -of-the-art understanding of these ecosystems and of the effect of present and future changes on habitats and productivity. In addition, a failure to fully utilize available research information may increase the potential for interference with subsistence utilization of indigenous wildlife species and create an erroneous attribution of the causes of expected environmental change.

One of the assumptions used in the Draft Plan/EIS concerns a transportation system for 004

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moving exploration equipment and facilities using tracked vehicles. This method was replaced by use of air cushioned or low surface effects vehicles some time ago. Including it as a possible option reinforces our concern that the most recent literature on best practices has not been used in developing the EIS. Also, its inclusion could bias the results of the assessment work done to date and lead some to believe that exploration and production might have a greater impact on the tundra that will be the case if the most up-to-date technology is considered. 004

Another issue for us is the use of the phrase "cumulative impacts." It is the Commission's understanding that the EIS was prepared to address the opening of either all or only part of the subject area for exploration. "Cumulative impacts" are generally of concern for later stages of development which will, if any viable discoveries are made and there is interest in developing oil and gas resources, require another EIS. Introducing this topic at the exploration stage may unnecessarily restrict future efforts and options. 005

Please feel free to contact the Commission if we can provide further elaboration.

Sincerely,

George B. Newton, Jr., Chairman
U.S. Arctic Research Commission

cc: ARC Commissioners
G.W. Brass, ARC Executive Director

1313-001
Although some citations are missing, the draft EIS bibliography contains more than 650 references; about 120 of these are from peer-review publications. Some of the authors of the "gray literature" cited in the EIS wrote articles that appeared in peer-reviewed documents cited in the EIS. Also, there are citations from papers presented at conferences and symposiums where many technical experts presumably would be present.

During the preparation of the draft EIS, resource specialists from Federal and State agencies and commissions and the North Slope Borough reviewed and commented on Sections II, III, and IV of the EIS. The agencies are noted in Sections VI.D and G.

In addition, the planning process included scoping meetings, workshops, and contacts with municipal governments, Native organizations, and individual Natives. The Inupiat were invited to share their traditional knowledge of resources in and adjacent to the planning area and how these resources are used. During this process, scientists were able to obtain additional information on cultural, fish and wildlife, and socioeconomic resources of the planning area and the North Slope. The municipal governments and Native organizations who contributed to this process are listed in Section IV.G.

This information-gathering process has resulted in a substantial body of knowledge from a variety of traditional and scientific sources. Some of the traditional information has been presented in a public forum—scoping meetings and public hearings—where the speakers' peers are present. The traditional knowledge and scientific information has been used to describe the environment in and adjacent to the Northeast NPR-A Planning Area. This information has also been used to analyze the effects of oil and gas development on the physical, biological, and sociocultural resources in and adjacent to the planning area.

Based on all of the resources used, BLM believes it has used the best information available to prepare the IAP/EIS.

1313-002 and 003
The EIS is intended to be an analysis of the North Slope ecosystem and the effects of the proposed activity on the component parts and the interrelationships. The effects on the physical environment, which includes air, water, and land resources or habitats, are considered by those analysts discussing the various biotic components, which include the marine mammals, fish, caribou, birds and endangered species components of the system. These effects on biotic resources also are interpreted for effects on the human environment, which includes sociocultural, subsistence, and economic components. For example, if acid rain were an issue, the effect on the tundra biome, which could affect caribou and subsistence hunting, would be addressed respectively. The relationships of the physical factors, biological factors, and human factors are the primary concerns and issues identified for analysis in the EIS. The effects of the physical environment as it translates directly to the human factors would also be considered. Some effects, for example, some biological resources, may not translate to a measurable effect on human activities or vis versa. In essence, the dynamics of the component parts and their interdependent relationships are presented here to capture the trend, status, and condition of the ecosystem.

1313-004
Although there is considerable uncertainty regarding the cause of the recent warming that has taken place in northern Alaska, the BLM agrees there is cause for concern because of the increase of atmospheric CO_2, methane, and other greenhouse gases. Therefore, the BLM included a discussion of this important issue in the final IAP/EIS (Sec. III.A.4). Although it is logical to assume that the increase in atmospheric greenhouse gases is responsible for the observed changes, some studies have shown that climate in the Arctic might be responding to changes due to other factors. Evidence indicates that the changes may be periodic and may cycle in terms of decades, centuries, or millennia. Therefore, some degree of caution is necessary in predicting future conditions in the NPR-A during the proposed management actions.

If temperatures continue to warm, changes in arctic ecosystems appear inevitable. However, caution is necessary because changes are highly uncertain and difficult to predict. Evidence of past climatic changes, sometimes occurring abruptly and lasting for decades or centuries (Sec. III.A.4), might have led to the evolution of genetic plasticity in arctic flora and fauna that will enable certain species to respond or adapt in unpredictable ways. The BLM has added information (see Sec. III.A.4) on the probability that the ecosystem will change if the climate continues to warm. However, the BLM finds it uncomfortable to predict exact changes or to forecast beyond the scope of this final IAP/EIS. As the Arctic Research Commission pointed out in its comment, the area proposed for development is small. Furthermore, the area most likely to be explored or developed probably will impact a smaller part of the area than the one considered in the final IAP/EIS. The BLM considers it unlikely that the management actions will significantly affect individual species, alter the direction or the evolution of ecosystem change; climatic changes that appear to be determined on a regional and global scale.

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1313-005

Air cushion vehicles (ACV) have not been used on the North Slope to transport heavy equipment such as drill rigs. They have, however, been used for lightweight haulage. They would be of particular value for deploying oil-spill-containment equipment during summer or breakup periods. Low surface effects vehicles, such as Rolligons, have been used to move equipment over frozen tundra for several years. Typically, an ice road is prepared to the drill site and heavy equipment is pulled by tractor over the ice road to the site. The heavy equipment (module, drill rig, etc.) usually is mounted on a tire-supported trailer bed. Heavy trucks and tracked vehicles are not allowed outside the ice road.

1313-006

The IAP/EIS is undertaken in part to consider the advisability of making lands in a part of the NPR-A available for oil and gas leasing. The IAP/EIS would serve as the sole necessary NEPA documentation for the first lease sale and would be used to tier off future NEPA documentation for any future sale. Additional NEPA documentation is required for other steps in oil and gas exploration and development, i.e., seismic exploration, exploratory drilling, and for development. These documents, too, would tier off of this IAP/EIS.

It is appropriate for the IAP/EIS to examine impacts beyond that associated with the paper exercise of conducting a lease sale, or the exploratory leasing phase. Selling an oil and gas lease transfers certain rights to the lessee to obtain as well as explore for petroleum resources. The BLM cannot ignore the potential impacts from exploration and development to obtain the resources, and the IAP/EIS analyzes these impacts.

Cumulative impacts refers to impacts from both the activities that flow from the action addressed in the IAP/EIS, including exploration and development for oil and gas, and from activities beyond the scope of the IAP/EIS, such as development on nearby Federal, State, and private land. (40 CFR 1508.7). Please see Response 1851-025.

1314

Alaska Waveriders
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March 3, 1998

Mr. Gene Terland
NPR-A Planning Team
Bureau of Land Management
222 W. 7th Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland:

Alaska Waveriders is a group of in-water recreationists and commercial fisherman which was formed in the wake of the Exxon Valdez disaster. Alaska Waveriders is committed to protecting Alaska's coastal environments from unnecessary and unwise development, and especially from oil spills. These comments are somewhat more extensive than was our oral presentation at the hearing here in Anchorage on January 21.

Generally, Alaska Waveriders prefers terrestrial over offshore oil development. Nonetheless, we also believe that there are some terrestrial situations which should not be developed because of their importance to fish and wildlife and other exceptional values. The planning area in the northeast corner of the NPR-a has two such areas, Teshekpuk Lake and Colville River Special Areas.

In regards to oil leasing in the NPR-a, Alaska Waverider's position is really quite simple: There is no reason to lease in the NPR-a at this time. And furthermore, there should be no leasing without permanent protection for the NPR-a's Special Areas. If, on the other hand, petroleum development is unavoidable at this time, which we don't believe, then, again it should not be visited upon the Special Areas. Teshekpuk Lake and environs provide critical, irreplaceable habitat for the Teshekpuk caribou herd and for molting waterfowl from all over northwestern Alaska, including the Yukon-Kuskokwim delta. If "doing it right" means anything, then it should mean avoiding disturbing critical habitat for important populations at critical times. According to this definition, there is no way to "do it right," despite what the Governor and the oil industry say.

Similarly, the Colville River Special Area provides critical, irreplaceable habitat for peregrine falcon and gyrfalcon and passerines. It also provides critical winter habitat for moose during the period when moose are most stressed and least likely to survive. The multi-season importance to key wildlife species means that it would be almost impossible to conduct exploration activities and

impossible to go into production without significantly disturbing resident species. Therefore it is impossible to develop the Colville River and Teshekpuk Lake Special Management Areas and "do it right." The two are mutually exclusive.

Alaska Waveriders has reviewed the DEIS. It contains a great deal of information, represents considerable effort, and is a good start. Unfortunately, it doesn't tell the whole story. In general, we believe that:

- The decision to consider leasing is based on flawed logic and bad public policy, specifically,
- There is no need for leasing in the NPR-A at this time, as we will explain below,
- The DEIS fails to discuss the study area's exceptional wilderness qualities, 001
- The DEIS significantly underestimates the likely environmental impacts. For example, it fails to adequately address the fact that gravel which will be needed for 002 drilling pads and pipeline foundations is virtually non-existent west of the Colville River. Nor does it begin to explain how oil spills from feeder and transmission 003 lines during the will be contained and recovered when there are no access roads or work pads and the surface is thawed;
- The DEIS fails to adequately acknowledge the potential impacts of oil exploration 004 and development activities on subsistence and particularly on the waterfowl which play a key roll in the subsistence economy of Yukon-Kuskokwim delta residents
- The DEIS probably overestimates potential oil reserves, 005
- The DEIS fails to address the cumulative impacts from an onslaught of existing and proposed onshore and offshore North Slope oil development activities the 006 likes of which Alaska and the U.S. arctic have never before known or contemplated;
- It is one thing to say that oil development can be done right,, it's quite another to actually do it right. Despite industry and government claims to the contrary, neither the federal nor the state government have the resources, manpower, or political will to protect the environment from petroleum development activities already occurring on the North Slope, to say nothing of activities in an entirely new region. For example, government has failed to ensure that existing exploration, production, and transportation operations on the North Slope are conducted in accordance with existing regulations and the stipulations that are in the permits. Indeed, there is such a lack of regulatory presence on the North Slope that often government only learns of problems through industry whistle blower; even then, however, regulators rarely take meaningful corrective action; and finally,
- The DEIS suggests that stipulations designed to protect the environment and 007 dependent fish and wildlife can and will be waived without explaining the procedures and mechanisms involved or providing any assurances that the public will be allowed to have any say or role in it. Given past experience with Alyeska

and the North Slope producers and the state and federal regulatory vacuum that currently exists in Alaska, this is alarming. 007

Rather than belabor these issues which others can--and no doubt will-- address with more authority, Alaska Waveriders would like to focus on the logic behind opening the NPR-A. As we understand it, the Department of Interior and Clinton Administration has been convinced that if the Coastal Plain of the Arctic National Wildlife Refuge is closed to oil drilling, then somehow industry needs to be compensated. This is ridiculous. In the first place, the Coastal Plain isn't permanently closed nor will industry ever give up on drilling in the Refuge. Therefore, the current initiative will merely increase the likelihood that someday the entire North Slope of Alaska will be one huge 500-mile long post-industrial hazardous-waste land. 008

Moreover, Alaska Waveriders challenges anyone to prove that industry is somehow suffering as a result of not being allowed into the Arctic National Wildlife Refuge. In fact, the North Slope has a huge backlog of proven and recuverable oil reserves--perhaps three or more decades worth--waiting to be developed outside of the NPR-A. It is precisely this backlog which makes it possible for the likes of Arco, for example, to promise, "No decline after 1999." Indeed, the North Slope is in the midst of an oil boom. Industry is in the process of developing at least six new fields (Northstar, Alpine, Badami, Tarn, Liberty, and Sourdough).

Also lacking merit is the argument that we need to keep finding more oil because TAPS can't operate on less than 600,000 barrels per day. Keeping TAPS open is a thermal problem , not a volume problem, as previously believed. We understand that if the oil is heated to 130 degrees F at each pump station, the pipeline can operate on volumes of 150,000 barrels per day, or less.

One indication of just how much recoverable oil is out there comes from the Point Thomson field. Despite over a decade of prodding by the state, the leaseholders currently refuse to produce Point Thomson which has 700 million barrels of extremely valuable natural gas liquids (NGLs), probably more petroleum than is likely to be recovered from the portion of the NPR-A under discussion.

Furthermore, Point Thomson has at least 10 trillion cubic feet (tcf) of recoverable natural gas. Ten tcf is a lot of gas. In fact, ten tcf is almost enough gas to support a 25-year gas export project. Currently, there are more than $200 billion dollars worth of recoverable gas reserves on the North Slope. The producers argue that it's "not economic" to develop those reserves at this time. "Not economic" doesn't mean that the oil companies can't make money producing those resources. It really means not as economic as a gas project will be after state and federal tax breaks. For example, on the federal side, the producers will soon approach Congress for corporate tax cuts totaling some $6 billion. Even if Congress says no, which is unlikely, the bottom line is that the Clinton Administration owes industry nothing, and industry neither needs nor deserves access to the NPR-A.

BLM's Draft Environmental Impact Statement (DEIS) for 4.6 million acres of the NPR-A lists five alternatives. Not one includes permanent protection for the two critical wildlife habitats recognized as Special Areas since 1977. And though the NPR-A contains the finest and largest remaining examples of de-facto, unprotected wilderness in the U.S. nowhere does the DEIS consider wilderness designation for a single acre of the Reserve. 009

Why should BLM consider wilderness? For starters, wilderness is good for fish and wildlife habitat. The importance of the Teshekpuk Lake and the Colville River Special Areas to wildlife has long been recognized. Teshekpuk hosts a heard of 25,000 caribou, year round. During summer, Teshekpuk Lake and adjacent wetlands support hundreds of thousands of waterfowl and shorebirds, including the largest concentration of molting geese in the Arctic and over a fifth of the world's brant. Likewise, the Colville River has one of the world's highest concentrations of nesting birds of prey and passerines and a large population of moose which is heavily hunted by residents of Fairbanks and the North Slope.

Fortunately, we aren't faced with choosing between wildlife and oil. If NPR-A has to be developed now, there's plenty of land within the planning area for both protecting the critical habitats of Teshekpuk Lake and the Colville River Special Areas and allowing exploration and development activities elsewhere. Certainly, the Alaska Waveriders could live with something like Alternative B if it included permanent protection for the Colville and Teshekpuk Special Management Areas. Unless the residents of Nuiqsut want to protect lands around their village we see no reason why oil and gas leasing should be deferred in the sections immediately to the North and West.

The NPR-A was created 75 years ago to save oil for national emergencies, but now the laws have changed and any oil produced can be exported to Asia. Before the government leases the NPR-A, at the very least, the Teshekpuk Lake and Colville River Special Areas should be permanently protected, so we don't export our recreational and subsistence opportunities and our wildlife with our oil. Such a decision recognizes multiple values and makes sense for everyone. Any decisions to open lands within the planning area to oil and gas development are essentially irreversible. Therefore, we urge the BLM and the Department of Interior to proceed with the utmost caution.

Alaska Waveriders appreciates the opportunity to comment. We also appreciate BLM's willingness to extend the comment period which, initially, was unreasonably short given the size and complexity of the document. We urge the BLM to give the public another opportunity to comment once the agency develops its preferred alternative.

Sincerely,

Mike Macy

Mike Macy, Director of Public Policy

1314-001
The area's exceptional wilderness values are described in Section III.C.6.a(4), Wilderness.

1314-002
It is true that the location of gravel sources west of the Colville River is a major concern for future development in the NPR-A. The BLM assumes that survey work to locate suitable gravel supplies will be initiated in the areas surrounding new discoveries. At this early stage in planning, the BLM can only identify possible sources and transportation methods associated with the construction of production pads. Other aspects of gravel concerns are stated in Responses to Comments 1652-037 and 1660-093.

1314-003
Helicopters with low-ground-pressure skids are available to access spills and deploy workers to repair the damaged equipment. Low-ground-pressure equipment also is available to access the site and clean up spills. This equipment is capable of traveling over wetlands and having less of an impact then caribou walking over the same ground.

1314-004
To better address potential impacts on subsistence waterfowl harvests by hunters in the Yukon-Kuskokwim (Y-K) Delta, subsistence-related hearings were held in Bethel, Alaska, May 12, 1998, to provide Y-K Delta residents an opportunity to comment on subsistence issues. Open houses in Hooper Bay and Bethel were held on May 11 to explain the NPR-A IAP/EIS alternatives and mitigation and to get informal stakeholder comment on the plan.

The action could have some undetermined effect on Y-K Delta waterfowl that use the northeastern NPR-A for nesting/molting and use Y-K Delta habitat during migration. At this time, the undetermined effects on waterfowl cannot be measured by available research data. Some mortality in the northeastern NPR-A could be expected to subsistence waterfowl species, but mortality would not be high, as goose molting areas are not open to leasing or development under the Preferred Alternative. There is no realistic way to translate any potential mortality in the northeastern NPR-A into a measurable effect on a distant subsistence user.

Please see Response 1450-001. Section IV.C.8.b.(5) analysis for Alternative B states: "Because overall effects of management actions on birds in the northeast NPR-A area are expected to be minor, and these birds, in general, disperse over large migration and wintering areas, effects on stakeholder groups [including subsistence hunters] are also expected to be minor. However, detailed information that could allow accurate analysis of this effect is not readily available or has not been compiled in a usable format." Section IV.C.13.c(4) has been changed to include information concerning potential impacts on subsistence waterfowl harvests to hunters in the Yukon-Kuskokwim Delta.

1314-005
Almost all experts will agree that there is no "right answer" or "wrong answer" when estimating undiscovered petroleum resources in a frontier province. The BLM has used methodology and computer modeling that has been reviewed and generally approved by a scientific organization and industry. The commenter has failed to provide details or a basis to support the claim that BLM's assessment overestimates potential oil reserves.

1314-006
Please see Response 1851-025.

1314-008
The public has been given the chance to comment on the procedures and mechanisms involved in waiving stipulations during the public comment period for the draft IAP/EIS. The stipulations and process outlined in the preferred alternative reflect those comments. Please see Response 1658-004.

1314-009
Please refer to Section I.A and Response 1851-002.

1314-010
Please refer to Sections I.A,II.G, and Response 1851-058.

ANADARKO PETROLEUM CORPORATION

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Anadarko

March 6, 1998

RECEIVED
MAR 1998

NPR-A Planning Team
Bureau of Land Management
Alaska State Office (930)
222 W. 7th Avenue
Anchorage, AK 99513-7599

Re: Northeast National Petroleum Reserve-Alaska Draft Integrated Activity Plan/ Environmental Impact Statement

Gentlemen:

Anadarko Petroleum Corporation — a large Houston-based independent oil and gas exploration and production company — was present as an observer at the first National Petroleum Reserve - Alaska (the "Petroleum Reserve") sale in Fairbanks, Alaska on January 27, 1982. Anadarko's interest in the Petroleum Reserve has not only held fast since the last lease sale in 1984, but has increased as our North Slope knowledge and activity level have expanded.

Today, Anadarko is one of the most active independent oil and gas companies in Alaska. We are a working interest owner with operator ARCO Alaska in the newly-discovered Alpine Field to be developed on the Petroleum Reserve's doorstep, and we operate a joint venture with ARCO Alaska in the Cook Inlet Basin. Currently underway is a large 3D seismic acquisition program in the Kenai National Wildlife Refuge, and we are planning to drill a well on the western side of Cook Inlet in Summer 1998.

The Alpine Field, as well as other industry developments now underway on the North Slope, have set new standards for arctic exploration and development. Long-reach drilling, smaller and fewer drilling pads, elimination of reserve pits and underground injection of cuttings have greatly reduced industry's footprint.

This is a new time with new technologies and we have a much better understanding of how our operations impact the environment and the people and resources of the North Slope.

We see tremendous oil potential for the Petroleum Reserve, but the opportunity will not be realized unless BLM can conduct a successful and competitive sale and award leases with workable operating requirements. If this crucial first sale is not successful, the probability is high that petroleum industry interest will wane, exploration dollars that could have been spent in Alaska will go to other areas of the world and the potential for economic development of the Petroleum Reserve for the benefit of State and Federal taxpayers will again go unrealized.

As Anadarko Petroleum Corporation's formal response to the draft Integrated Activity Plan/Environmental Impact Statement (DEIS), here then are our thoughts on how to achieve a successful sale:

1. Selection of Alternative E, a full leasing scenario, would set the stage for a successful sale because this alternative opens up the known hydrocarbon fairway along the Barrow Arch. According to the BLM/MMS geologic assessment results reported in the DEIS, the risked mean oil potential for the entire N.E. Planning Area of the Petroleum Reserve is 3.070 Bbbl. This oil volume is expected from eleven of the fourteen described geological plays. However, proposed acreage deletions under Alternatives D, C and B running from north to south through the N.E. Planning Area increasingly reduce the area available for leasing, thereby decreasing the potential oil volumes which could be discovered. In fact, the reductions significantly impair the economic viability of potential oil development in the area.

The attached spreadsheet lists the plays and their respective potentials for Alternatives B, C, D and E. For each play, the leasable percent of the total area for each Alternative is listed, as is the risked mean conventionally recoverable oil reported in the DEIS. The play reserves are recalculated based on the reduced leasable area under each alternative. For example, the mean conventionally recoverable oil for the first play, the Endicott Barrow Arch, is 261 MMBO. The leasable area for that play is 24%, 11% and 7% for Alternatives D, C and B, respectively. Multiplying those percents times 261 MMBO results in only 62.6, 28.7 and 18.2 MMBO, respectively, actually being available for discovery. On a stand-alone basis, these volumes are probably subcommercial. Under Alternative E, the entire 261.0 MMBO is available. However, these volumes are further reduced 84% assuming certain economic criteria as stated. On the spreadsheet, the sum of risked mean conventionally recoverable oil for all plays is listed as well as the sum of risked mean economically recoverable oil. The latter totals are 103, 150, 247 and 494 MMBO for all plays for Alternatives B, C, D and E, respectively. Accordingly, the DEIS reports that of the 3.070 Bbbl total, only 494 MMBO would be commercially recoverable using an $18 per barrel price under Alternative E. These resource estimates under realistic pricing

scenarios may rule out a commercial exploration venture without the lands under Alternative E being made available.

While the BLM/MMS geologic assessments may prove to be conservative, exposure to the greatest possible area increases the likelihood of a commercial discovery. We view the N.E. Planning Area, particularly the hydrocarbon fairway along the Barrow Arch and through the balance of the Petroleum Reserve, as dramatically underexplored, particularly in the current era of large 3D seismic acquisition programs and sophisticated processing technologies. But in order to conduct a thorough and technically sufficient exploratory program in large areas where modern geologic information is scant or non-existent such as the Petroleum Reserve, basin-wide access for the seismic tools and drilling operations is necessary. Programs that create a patchwork quilt of accessible and leasable lands due to acreage withdrawals, deferrals or overly restrictive operating stipulations effectively thwart the compiling of a complete geologic picture and escalate the perceived risk and cost of any venture. Potential lessees may view the uncertainty of defining drillable prospects to be too great and the enthusiasm for leasing will suffer. A decision which fails to expose all of the N.E. Planning Area to leasing will send a clear, and negative message regarding the long range prospectivity of exploring the Petroleum Reserve and contribute to an irreversible wasting of resources.

The Petroleum Reserve has a long and rich history of petroleum exploration which is actually covered somewhat perfunctorily in the DEIS. More prominent mention could have been made in the introductory paragraphs regarding the 70 year history of surface geological work, the acquisition of thousands of line miles of seismic acquired by the U.S. Navy, the U.S. Geological Survey and private industry, and the 48 exploratory wells drilled between 1946 and 1981. The potential range of in-place reserves for the Petroleum Reserve as a whole (820 million to 15.4 billion barrels of oil) deserved to be highlighted in the background section of the document. Without these facts at the outset, the uninitiated reader or a reader who may not delve too deeply into the details of the document might erroneously conclude that BLM is analyzing for the first time new oil and gas leasing of an environmentally pristine part of the arctic slope previously unimpacted by industrial activity. 001

The DEIS should also have analyzed the potential loss of oil reserves and the revenues to State and National governments if the area is not offered for oil and gas leasing. Absent a discussion of the economic impact of no leasing, the reader is deprived of an analysis that compares risk with reward, and is instead given an analysis that illustrates only the risks that may be incurred. 002

2. Alternative E most consistently reflects the balance Congress intended between oil and gas development and the protection of the Petroleum Reserve's other values.

Congressional enactments governing management of the Reserve make it clear that the Reserve's non-petroleum values must be protected in a way that does not jeopardize its oil and gas development potential. Alternatives A-D fail to achieve this balance. They would remove areas having significant oil and gas potential from leasing, would substantially reduce the likelihood of a commercial discovery of oil and gas and would chill industry interest, not only in the N.E. Planning Area but in all of the Petroleum Reserve.

BLM has chosen to use the land use planning process to make decisions on whether to conduct a leasing program in the N.E. Planning Area and if leasing is approved, how that program should be designed as part of BLM's land use plan. In framing a land use plan, BLM must balance oil and gas development against protection of the Petroleum Reserve's subsistence, ecological and other values. How it balances these uses will depend on how the BLM applies the management standard Congress enacted for the Petroleum Reserve. The following examines that standard and its implications for the planning decisions the BLM will make for the N.E. Planning Area. A more detailed memorandum of the legislative history of the Reserve is an attachment to this letter. 003

The primary purpose of the Reserve has always been petroleum development. The land which makes up the Reserve was first set aside in 1923 by Executive Order 3797-A which withdrew the area from the Mineral Leasing Act and designated the land as Naval Petroleum Reserve No. 4 ("Reserve No. 4"). Reserve No. 4, together with the other three Naval Petroleum Reserves created during the first quarter of this century, was created to assure that in time of war, the Navy's ships would have adequate petroleum supplies. *See* H.R. Rep. No. 81 (1),94th Cong. 2nd Sess. (1976).

In 1976, Congress passed the Naval Petroleum Reserves Production Act ("NPRPA"). Pub. L. No. 94-258, 90 Stat. 303 (1976). Title I of the NPRPA renamed Reserve No. 4 the "National Petroleum Reserve in Alaska" and transferred authority over the Reserve to the Secretary of the Interior. The reports prepared by Congress prior to the 1976 enactment of the NPRPA and creation of the Reserve demonstrate that the law emerged in the spirit of promoting expedited domestic petroleum exploration and production in America. The House Committee on Interior and Insular Affairs (the "Interior Committee") stated that the bill sought to accomplish three things:

> First, to authorize the Secretary of the Interior to establish national petroleum reserves on the public lands.

> Second, to authorize the Secretary to prepare plans for *development and production* of oil and gas on such reserves in the lower forty-eight states, subject to Congressional acceptance of any production plan.
>
> Third, to direct the Secretary *to explore for oil and gas on the 22 million-acre Naval Petroleum Reserve No. 4 in Alaska*, and to report his findings annually to Congress.

H.R. Rep. No. 81 (1), 94th Cong. 2nd Sess. (1976) (emphasis added). Further, the Interior Committee believed that "the urgent national need for immediate action to produce more domestic oil and natural gas [weighed] heavily against any further delay through duplicating this Committee's hearings and consideration" by the Armed Serves Committee, which also had an interest in the subject lands. The focus was on increasing domestic production within six months. *Id.*

In discussing production from all the reserves, the Interior Committee urged:

> Not only must production commence promptly, but the Secretary of the Interior, who has responsibility for managing the Nation's natural resources, should make every effort to explore and develop new domestic sources of supply wherever possible, *including exploration of Naval Petroleum Reserve No. 4 in Alaska.*

Id. (emphasis added).

With respect to Alaska, specifically, the Interior Committee stated:

> The Committee finds that early exploration for oil and gas in Naval Petroleum Reserve No. 4 is essential. However, production is out of the question for a number of years due to a lack of transportation.

Id.

Congress also provided for protection of the Petroleum Reserve's other values, but said that even in the most environmentally sensitive areas of the Petroleum Reserve, such protection must be consistent with the Petroleum Reserve's principal purpose. Accordingly, Section 104(b) of the NPRPA provided that exploration within special areas containing subsistence, recreational, wildlife, historical or scenic values should be conducted so as to

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assure the "maximum protection" of such values but only "to the extent consistent with the requirements of this Act for the exploration of the reserve." (Emphasis added)

The Committee of the Conference on the bill which became the NPRPA explained how environmental protection under this standard would be balanced against the objective of promoting development of the Petroleum Reserve's oil and gas resources. It emphasized that the authority in mitigate the adverse environmental effects of oil and gas activities does not include the authority to prohibit such activities.

> It is the intention of this provision to immediately authorize the Secretary to require that exploration activities within these designated areas be conducted in a manner designed to minimize adverse impacts on the values which these areas contain. **While 'maximum protection of such surface values' is not a prohibition of exploration-related activities within such areas, it is** intended that such exploration operations will be conducted in a manner which will minimize the adverse impact on the environment.

H.R. Conf. Rep. 94-942, March 23, 1976 (emphasis added).

The language that Congress used in 1976 to make oil and gas development paramount in the Reserve is almost identical to language Congress used around the same time period to make wildlife or recreational values paramount in national wildlife refuges and national recreation areas. For example, in creating Utah's Glen Canyon National Recreational Area in 1972, Congress stated:

> In order to provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto and to preserve scenic, scientific, and historic features contributing to public enjoyment of the area, there is established the Glen Canyon National Recreation Area....

16 U.S.C.A. §460dd. Congress went on to state:

> Under such regulations as he deems appropriate, the Secretary [of the Interior] shall permit the removal of the nonleasable minerals ... and ... leasable minerals from lands or interests in lands within the recreation area ... **if he finds that such disposition would not have significant adverse effects on the Glen Canyon project or on the**

003

administration of the national recreation area pursuant to this subchapter. 16 U.S.C.A. §460dd-2(a) (emphasis added).

Likewise, when Congress established the California Desert Conservation Area in 1976, the express purpose was "to provide for the immediate and future protection and administration of the public lands in the California desert ...and the maintenance of environmental quality." 43 U.S.C.A.§1781(b). Still, Congress provided for mineral development activity in the area, to the extent it was conducted so as not to unduly impair the area..

> Subject to valid existing rights, nothing in this Act shall affect the applicability of the United States mining laws on the public lands within the California Desert Conservation Area, except that all [such] mining claims ... shall be **subject to such reasonable regulations as the Secretary may prescribe to effectuate the purposes of this section. Such regulations shall provide for such measures as may be reasonable to protect the scenic, scientific, and environmental values of the California Desert Conservation Area against undue impairment.**

43 U.S.C.A. §1781(f) (emphasis added).

Thus, Congress authorized mineral development in these areas, but permitted such development only so long as it was not inconsistent with the principal purpose of protecting the area's wildlife or recreational values. The practical effect was to establish a management standard which allowed multiple uses of the land while recognizing the paramount importance Congress had assigned to wildlife and/or recreational values.

Similarly, when it established the Petroleum Reserve, Congress authorized the BLM to manage and protect the Petroleum Reserve's non-petroleum values, but only to the extent that such protection was not inconsistent with the principal purpose of developing oil and gas in the Petroleum Reserve. Accordingly, the BLM may apply a multiple use land management standard for the Petroleum Reserve, but it must do so in a way which recognizes the paramount importance Congress has assigned to promoting the development of the Petroleum Reserve's petroleum resources.

Congress acknowledged the special status of the Petroleum Reserve in the 1980 Alaska National Interest Lands Conservation Act (P.L. 96-487, now codified at 43 U.S.C.A. 3101) through its express exclusion of the Petroleum Reserve from mandated studies of Federal land for the purpose of determining future land use. Section 3141 of ANILCA directs the Secretary to carry out a study of all federal lands north of 68 degrees north latitude other than lands

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included the National Petroleum Reserve-Alaska and in conservation units established by ANILCA. The purpose of the study was to "(1) assess the potential oil and gas resources of these lands and make recommendations concerning future use and management of those resources including an evaluation of alternative transportation routes needed for oil and gas development; (2) review the wilderness characteristics, and make recommendations for wilderness designation, of these lands; and (3) study, and make recommendations for protection of, the wildlife resources of these lands." Section 3148 of ANILCA further directs the Secretary to establish an oil and gas leasing program on lands not subject to the study required by section 3141, other than lands included in the Petroleum Reserve. However, the act stipulates that "such program shall not be undertaken by the Secretary on these lands where applicable law prohibits such leasing or on those units of the National Wildlife Refuge System where the Secretary determines, after having considered the national interest in producing oil and gas from such lands, that the exploration for and development of oil or gas would be incompatible with the purpose for which such unit was established." Expressed exclusion of the Petroleum Reserve from these portions of ANILCA demonstrates that Congress recognized the Petroleum Reserve as a distinct area subject to NPRPA with its principal purpose defined and the protection of its other resource values addressed.

The 1981 Interior Appropriations Act (P.L. 96-514, now codified at 42 U.S.C. Sec. 6508, the "Leasing Act") authorized competitive leasing within the Petroleum Reserve. The Leasing Act authorizes the Secretary to impose such "conditions, restrictions, and prohibitions" as he deems necessary "to mitigate reasonably foreseeable and significantly adverse effects on the surface resources" of the Reserve. Accordingly, the Secretary promulgated some rules under the Leasing Act allowing the BLM to "prohibit use of and access to" lands within the reserve, *but only "[t]o the extent consistent with the requirements of" the 1976 NPRPA*, which had established petroleum development as the dominant purpose of the Reserve. 43 C.F.R. Section 2361.1(e)(1). Therefore, any prohibitions on oil and gas development must not be so broad as to bar or jeopardize petroleum development.

Because the prohibitions contemplated by the Leasing Act must be consistent with the requirements of the NPRPA, which does not allow prohibition of leasing itself, such prohibitions must be limited to controlling the manner or timing of particular activities within a leased area. Thus, while the BLM cannot completely prohibit leasing in any area of the Reserve identified as having oil and gas potential, it may, for example, require particular types of oil and gas development activities to be *scheduled* during certain times of the year, effectively prohibiting those activities at all other times. Through such "prohibitions", the BLM can effectively protect the unique surface values of the Petroleum Reserve without preventing development of the petroleum resources. Consequently, where potential oil and gas development may affect the Petroleum Reserve's other values, the BLM may impose some conditions on leasing and subsequent development to mitigate those potential impacts, but the BLM may not make leasing

003

decisions or impose mitigation measures which would jeopardize or prohibit potential oil and gas development, the dominant use for which the Petroleum Reserve was created. 003

3. Impact-specific operating stipulations and continuing NEPA analysis will adequately protect the surface resources under an Alternative E leasing scenario. Although an extensive analysis of the oil industry's environmental record on the North Slope of Alaska for purposes of perspective may be beyond the scope of the DEIS (which would demonstrate little impact on the environment),the relatively benign nature of the potential impacts in the N.E. Planning Area is accurately reflected in the Alternative E Impacts discussion. Significantly, the discussion in the DEIS regarding "Unavoidable Adverse Effects" on the various resources predicts little in the way of irreversible loss or permanent damage. In fact, the text continually uses terminology such as "short-term effects," "not expected to be significant," "very minimal and localized," "can be mitigated," "losses of small numbers," "not expected to have a measurable effect," etc. when describing the impacts to resources. In short, there is simply no compelling evidence presented of potential environmental degradation by the oil and gas industry that serves to justify the withdrawal of vast acreages from leasing.

Protection of the surface resources can be achieved by impact-specific operating stipulations developed through cooperation between the lessee and the BLM. The DEIS itself recognizes the "need for further NEPA analysis" in the event of exploratory drilling or construction of infrastructure based on proposals for site specific activity. The DEIS contains, unfortunately, an extensive set of stipulations which attempt to anticipate and micro-manage a wide range of operating situations. Accordingly, many stipulations overreach. We do not think this exercise is productive because any one-size fits-all type solutions are inappropriate and premature without complete knowledge and analysis of the actual impacts to be considered. Potential impacts should be examined and mitigated at each phase of activity on a site specific basis using appropriate stipulations rather than using prohibitions as a mitigation measure. Environmental monitoring should be required to assure performance. 004

4. Oil and gas exploration and development activities are compatible with subsistence hunting and gathering throughout the Petroleum Reserve. The Petroleum Reserve is home to the Inupiat people. Anadarko recognizes the importance of subsistence hunting, fishing and gathering to local Inupiat communities, and believes it can conduct its operations compatibly with these subsistence activities. Oil and gas operating stipulations similar to those described in the DEIS can be designed both to preserve subsistence resources and to protect the local communities' continued access to them. These stipulations should be developed on a site-specific basis in the post-leasing, permitting stage, consistent with our discussion above.

Anadarko is aware of the desire of local communities to continue subsistence activities even within oil field boundaries. Anadarko supports efforts to work with local communities to design ways for this to occur without endangering oil field workers or facilities.

5. Rather than delete or defer areas of high ecological value from leasing, the BLM should use its authority to impose mitigation measures assuring "maximum protection" of those values. The Federal Land Policy and Management Act's requirement that public lands be managed to prevent "unnecessary or undue degradation" applies throughout the Petroleum Reserve. However, Congress recognized that some areas within the Reserve may deserve a higher degree of protection, because of their high ecological value. The NPRPA authorized the Secretary to designate such areas as "special areas" and provided that within them, the Secretary must assure "maximum protection" of the ecological values "to the extent consistent with the requirements of [the] Act for the exploration of the Reserve."

Deleting or deferring areas from leasing could remove all or parts of critical oil and gas prospects and significantly decrease the adds of finding hydrocarbons (see discussion pp. 2- 3, *supra)* and by limiting the lessees' flexibility to plan exploration, actually increase environmental impacts in the Planning Area. This would run counter to the Reserve's principal purpose and would not be necessary to protect the Reserve's environmental values.

The better alternative is not to delete or defer lands from leasing, but, instead, lease these "special areas" subject to the condition that the lessee must reasonably demonstrate that studies or analyses of the specific effects of a proposed development activity support a finding that all phases of the proposed activity will be conducted in a manner that provides maximum protection of the values for which the area has been specially designated, without being so stringent as to make oil and gas development uneconomic. These studies and analyses would be submitted as part of the permitting and related NEPA analyses for any development proposed in a "special area." This would not jeopardize oil and gas development, but would impose the higher degree of protection prescribed by Congress for the Petroleum Reserve's more sensitive ecological resources. 005

6. Leasing of the N.E. Planning Area should occur in 1998 and be the first step in an ongoing and predictable leasing program for all of the Petroleum Reserve. Providing opportunities now for industry to find and delineate new reserves is critical to Alaska's economic future and to the United States' oil supply. Total North Slope oil production, at the peak of production in 1988, was 738.6 million barrels (an average of 2.02 million barrels per day). At that time, Alaska supplied 25% of the United States' oil supply. By 1997, total

North Slope production had declined to 284 million barrels (an average of .78 million barrels per day). Currently, the rate of production continues to decline at the rate of 10% per year.

The decline in North Slope production is directly reflected in the declining volume of oil transported through the Trans Alaskan Pipeline System ("TAPS"). If the decline in North Slope production continues at its present rate, continued operation of TAPS will no longer be economical. This could lead to a decision to abandon and dismantle the pipeline. Abandonment of TAPS would result in the loss of oil resources on the North Slope and would have substantial, adverse consequences for the Alaskan and United States economies. Moreover, the energy security of the United States would suffer, since the country would be forced to import more oil.

Oil development in the Petroleum Reserve could help slow the present decline of North Slope oil production and extend the life of TAPS. Experience on the North Slope has shown that it can take at least 8 years from the time an area is leased before oil can be found and produced. Clearly, then, it is in the public's interest to proceed expeditiously with the resumption of leasing in the North East Planning Area of the Petroleum Reserve.

If a schedule for performing similar evaluations in the balance of the Petroleum Reserve were already underway or at least contemplated, the confidence of potential bidders and the number of competitors would probably increase significantly which would help to insure a successful first sale. Planning for the second round of leasing should commence immediately following the first sale to take advantage of the interest and momentum by BLM and industry.

Conclusion. Anadarko is, once again, very excited about the opportunity to participate in oil and gas leasing and development in the National Petroleum Reserve-Alaska. We are encouraged by statements made by Secretary Babbitt this past summer regarding the approach that may be taken to oil and gas leasing in the Petroleum Reserve. He asked whether it may be time to develop a new paradigm for making leasing decisions. Referring to the technological advances the industry has made in the arctic, the Secretary suggested that it may not be appropriate to view the Petroleum Reserve "traditionally" in terms of what should be "on-limits" and what should be "off-limits" to leasing. We concur.

Our industry has a track record for having successfully met the challenge of arctic exploration and development, and we continue to get better at it. With appropriate safeguards, we can conduct our activities throughout the Petroleum Reserve without compromising important cultural, subsistence and environmental values. Anadarko urges the DOI to develop a program which systematically and on a set schedule exposes all of the Petroleum Reserve to

industry interest. We are confident that this approach will attract industry investment and is the only way to realize the Petroleum Reserve's oil and gas potential for the benefit of the citizens of Alaska and of the Nation.

Sincerely,

John Seitz
Executive Vice President
Exploration and Production

1333-001
Section I.B.1 has been revised to clarify the fact that we are not analyzing oil and gas leasing for the first time, and that leasing did occur in the early 1980s.

1333-002
Alternative A represents the continuation of the status quo, i.e., not offering any of the planning area for oil and gas leasing at this time. A comparison of Section IV.B.11 with the corresponding sections for the other alternatives provides a range of economic impacts. Because none of the alternatives result in a permanent withdrawal of the area from oil and gas leasing, there is no potential loss of oil reserves and the associated revenues.

1333-003
Please see Response 1660-001.

1333-004
The opportunity for modifying stipulations to meet site-specific situations at the permitting stage is provided for under certain conditions (refer to the introductory language of the Preferred Alternative stipulations). The stipulations and conditions under which they could be modified were included in the draft IAP/EIS to more adequately determine the environmental consequences of the various alternatives. It also provides notice to the public and industry of the types of terms and conditions under which activities may be permitted. Also, please see Response 1658-004.

1333-005
Alternative E does not delete or defer lands from leasing. Stipulations were developed to indicate the activities that would be allowed and where to provide "maximum protection of the values for which the area has been specially designated, without being so stringent as to make oil and gas development uneconomic." The opportunity for modifying stipulations to meet site-specific situations at the permitting stage is provided by the waiver or exception language.

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 898
ANCHORAGE, ALASKA 99506-0898

1334

MARCH 10 1998

REPLY TO ATTENTION OF:

Regulatory Branch
North Section

Mr. Gene Terland
Project Coordinator - NPR-A
Bureau of Land Management (930)
222 West 7th Avenue, #13
Anchorage, Alaska 99513-7599

Dear Mr. Terland:

Enclosed are comments from the Alaska District Corps of Engineers' (Corps) review of the Draft Northeast National Petroleum Reserve-Alaska (NPR-A) Integrated Activity Plan/Environmental Impact Statement (IAP/EIS).

In summary, the Corps has determined that the Draft IAP/EIS is not adequate to meet the requirements under the National Environmental Policy Act (NEPA) for our permitting authorities should a particular development in NPR-A be proposed in the future. At the time that a development is proposed, supplemental analyses would be required to: identify specific impacts to waters of the U.S., including wetlands; identify the type and value of wetlands present at the project site; to assess a range of reasonable alternatives for each project component; and to assess the potential environmental impacts of the proposed project on a site specific basis. This cannot be accomplished with the Draft IAP/EIS, as this document has a specific focus regarding oil and gas leasing. 001

RECEIVED
MAR 10 1998

The Corps contact for NPR-A coordination is Ms. Mary Weger, North Section, Regulatory Branch, (907) 753-2716, FAX (907) 753-5567. Please contact me if you have questions regarding this matter.

Sincerely,

Don M. Kohler
Acting Branch Chief

Enclosure

GENERAL COMMENTS:

1. Stipulation 22 (Page II-30): Requires avoidance of disturbance to tundra soils, vegetation, or surface hydrology in goose-feeding habitat during exploration activities. This stipulation should be applied to all exploration activities within the entire lease area, and not be limited to only goose-feeding habitats. 002

2. Stipulation 27 (Page II-30): States that causeways, docks, artificial gravel islands, and bottom-founded structures may be permitted by the Authorized Officer (AO) in consultation with the North Slope Borough (NSB), but ignores the regulatory authorities of other state and federal agencies (Alaska Department of Natural Resources, Corps of Engineers, Minerals Management Service, U.S. Coast Guard, National Marine Fisheries Service, etc.) for such activities. Also, this stipulation acknowledges that such activities are potential developments, yet the Alpine Development scenario chosen as a representative development throughout the planning area does not include such activities. This shows that the Alpine scenario is too limiting. The EIS scope should be broadened to include a variety of activities, as implied by stipulation 27. The Alpine Development is site specific to the conditions present at its location; it is not appropriate to assume that any proposed development could be achieved with the same scenario as Alpine. 003 004

3. Stipulations 34 and 40 (Pages II-31, 32): Discuss sand/gravel extraction, yet the development of gravel sites is not included in the Alpine Development scenario. The locations of potential gravel sources should be identified in the planning area (i.e., where suitable gravel quantities are available). 005

4. Stipulations 59 and 60 (Page II-33): Discusses abandonment, and that the sites must be rehabilitated to the satisfaction of the AO, in consultation with ADFAG, ADEC, and NSB. These stipulations should include consultation with the Corps of Engineers (COE), as COE permits carry a similar stipulation that states that the permittee must obtain a permit modification if they wish to abandon an authorized activity, which may require restoration of the area. Hence, there is a potential for conflicting abandonment requirements due to overlapping jurisdictions. 006a

5. II.F.5. Future Interrelationships (Page II-38): The section which discusses COE permits should be rewritten to include the following information regarding COE authorities: The U.S. Army Corps of Engineers (COE) has authority under Section 404 of the Clean Water Act of 1977 (33 U.S.C. 1344) for the discharge of dredged and/or fill material into waters of the United States, including wetlands. The COE has authority under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) to require Department of the Army (DA) permits for structures or work in or affecting navigable waters of the United States, and for the construction of artificial islands, installations, and other devices on the seabed of the outer continental shelf (OCS), pursuant to section 4(f) of the Outer Continental Shelf Lands Act, as amended. On lands which are under mineral lease from the Minerals Management Service, the evaluation of the proposed work under DA jurisdiction in OCS waters will be limited to the impact of the proposed work on navigation and national security (33 CFR 322.5 (f)). DA permits are also required under Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413) for the transport of dredged material for the purpose of dumping it into ocean waters. 006b

6. Table II.D.2 (Pages II-48, 49) Vegetation impacts: This discussion has no mention of how many acres in the planning area are wetlands, what type of wetlands are in the planning area, what the values of these wetlands are, or what the potential impacts to wetlands could be. Nor do the sections which discuss the Affected Environment (Section III) and Environmental Consequences (Section IV) in the document have any mention of the extensive presence of wetlands, the types of wetlands, the values of these wetlands, or the potential impacts to wetlands in the planning area. This omission fails to acknowledge the magnitude of involvement that the COE's Section 404 regulatory authority will have on any proposed development that may occur in the planning area. In fact, the document generally does not 007 008

acknowledge the overlapping jurisdictions of other state and federal agencies, and implies that the AO has all-encompassing authority over the planning area. This may be true in terms of leasing, however, the jurisdiction of other regulatory authorities should not be ignored. 008

7. Figure III.C.7-2 (Page III-C-57): Shows the existing North Slope pipeline network and the proposed Badami pipeline, although it is not labeled and there is no key which identifies proposed pipelines. This figure should be revised to include the proposed Alpine, Tarn, Northstar, and Liberty pipelines. Also, the Badami pipeline and these other proposed pipelines should be labeled, and a key should be included which identifies proposed pipelines on the figure (dashed line). 009

8. Page IV-A-7, (b) Natural Gas (left column): In addition to the discussion of the TAGS natural gas transportation system, a discussion of the Alaska Natural Gas Transportation System (ANGTS) (for which state and federal leases and some permits are held), as well as gas-to-liquids technology should be included as alternatives to TAGS. 010

9. IV. Effects, A.5.g. (Page IV-A-41, 44): Same comment as in #8 above; should add sections h and i and discuss alternative natural gas transportation systems in addition to TAGS. 011

10. Page IV-B-3 (right column, 1st para., last two sentences): State that Stipulation 20j, which requires a minimum frost depth of 12" and an average snow depth of 6" before ground operations may begin, is insufficient to mitigate damage to vegetative cover, and that 10" of snow cover is necessary for effective protection of the vegetation. If this is true, why is Stipulation 20j included if it fails to serve its intended purpose? If 10" of snow cover is necessary for effective mitigation, that's what should be required in Stipulation 20j. 012

11. Pages IV-B-14 (left column, 3rd para.): Reference to Table II.D.3.
IV-C-33 (right column, 2nd line): " **TABLE DOES NOT EXIST!**
IV-D-11 (right column, 4th para.): " "(Should be Table IV.A.1.a-1)?
IV-E-13 (left column, 2nd para.): " " ". 013

12. Pages IV-B-15 (right column, 11.Economy,a.): Reference to Table II.H.3.b
IV-C-19 (left column, 3rd & 4th lines): " **TABLE DOES NOT EXIST!**
IV-C-42 (left column, 11. Economy,a.): " "
IV-D-13 (left column, " " "); " "
IV-E-14 (right column, " " "); " ". 013

13. Section IV of the document has entirely too much repetition of information between alternatives. Say it once and reference the previously stated information; otherwise the reader is overwhelmed by the redundancy. 014

14. Section IV - Effects of Alternatives: The inclusion of Summary, Conclusion, and Effectiveness of Stipulations subsections is a step in the right direction in making the document more "reader-friendly," however, the overwhelming redundancy masks this effort.

15. The Draft IAP/EIS for NPR-A is not adequate to meet COE NEPA responsibilities for any particular development scenario because much more site specific information is required for the Corps' permitting evaluation. It is understood that much of this information is not available until an actual development proposal is made. The alternatives discussed in this document pertain specifically to leasing of the NPR-A. The document may be adequate to support the broad land management decision of whether or not to allow leasing in the planning area, however, substantial supplemental analyses which address: specific impacts to waters of the U.S., including wetlands; the type and value of wetlands present at the project site; a range of reasonable alternatives for each project component; and the potential environmental impacts of the proposed project on a site specific basis would be necessary to satisfy NEPA requirements for COE permitting responsibilities. 015

EDITING ERRORS:

1. Page II-38, (right column, 4th para.): Typo - The USEPA issues NPDES permits "require" by the CWA - should be **"required" (d missing)**

2. Page II-60, (Table II.D.2, Economy, Alt. C, First Sale, mid-para.): Repeats "For activity other than oil and gas would have no effect, ... Should read " **For oil and Gas exploration and development activities**, production in Alternative C is projected to generate ....."

3. Page II-61 (Table II.D.2, Economy, Alt. E, First Sale): First sentence references Alternative A **not E, and deviates from employment equivalence (1 person working 6 months per year)**, where same criteria is equivalent to 1 person working 8 months per year in Alts. B-D. Also, mid-paragraph "for oil and gas production ...." **Alternative E is written twice redundantly**. Under the Cumulative Case, last sentence, **statement regarding severance tax of $1.5 to $5 _____ is missing the word million after the $5.**

4. Page II-62 (Table II.D.2, Cultural Resources, Alt. C, Multiple Sales, last sentence): Typo - "rought" - should read **roughly**. Also, impacts would increase 20 percent compared to Alt. B - **should this be 200 percent**, as Alt. D states 300 percent, and Alt. E states 400 percent?

5. Page II-63 (Table II.D.2, Cultural Resources, Alt. E, First Sale, 4th line): Typo - "would]" - should be **"would"** (extra 1).

6. Page II-69 (Table II.D.2, Coastal Zone Management, Cumulative Case, 4th line): Typo - "Alternative I" - should be **Alternative E.**

7. Page II-70 (Table II.D.2, Recreation & Visual Resources, Alt. A, 4th line): Typo - "gad" - should be **"gas"**.

016

8. Page II-71 (Table II.D.2, Recreation & Visual Resources, Alt. E, First Sale, line 14): Typo - **need space between "a and 1,400 acre..."**

9. Page III-A-2 (left column, Coal Resources, line 7): Typo - "hick" - should be **"thick."** Also, 2nd paragraph, line 3: Typo - "reserved" - should be **"reserves."**

10. Page III-A-10 (left column, 1) The Ellesmerian"!" Petroleum System): Typo - Exclamation point intended after "Ellesmerian!" in title? Also, **second paragraph has same ! notation after Ellesmerian.**

11. Page IV-A-7 (right column, 1st para., (a) Past Experience, last sentence): **Insert "_" after perhaps and "most" after inserted comma and before important.**

12. IV-A-37 (right column, last sentence, 2nd para. from bottom): Typo - "outs" - should be **"out"**.

13. IV-A-39 (right column, last sentence, 2nd para. from bottom): Two typos - "alaska" - should be **"Alaska"**; Also, "leas_" sales - should be **"lease"** sales.

14. IV-E-2,3 (right column, 2nd para. from bottom on page E-2; left column, last sentence of continuation para. at top of page E-3): Impacts to paleontological resources under Alt. D for Multiple Sales says could increase by "30" percent on Page E-2 and "300" percent on Page E-3; which is correct?

15. IV-E-5 (right column, 6. Vegetation para., line 7): Typo - states Alt. "C" incorrectly, - should be Alt. "D".

16. IV-E-10 (right column, Conclusion-First Sale, line 2): Typo - Activities other than oil and gas are expected to increase somewhat under Alt. D "a" compared to Alt. A - should be **"as" (missing s).**

17. IV-E-19 (left column, (2) Fish, (a), line 16): Typo - Seismic surveys associated with Alt. "E" - - should be Alt. "D".

016

18. IV-F-2 (left column, Conclusion-Multiple Sales, line 2): Typo - "similarto" - should be "similar to" (insert space).

19. IV-F-7 (left column, 7. Fish Resources, b., line 13): Typo - references Alt."C" as compared to Alt. B - should be Alt. "E".

20. IV-F-20 (left column, (d), 3rd para., Multiple Sales, line 2): Typo - "inmcrease" - should be "increase" (delete m).

21. IV-G-1 (left column, G. Effects of the Cumulative Case, line 2): Typo - "withexploitation" - should be "with exploitation" (insert space).

016

1334-001
The Corps is correct in their determination. The purpose of this EIS is twofold: (1) to identify what protection and enhanced management will be implemented for surface resources within the planning area, and (2) to decide if the BLM will conduct oil and gas lease sales within the planning area; and if so, what lands will be made available for leasing (see Sec. I.A). With these dual purposes in mind, the EIS provides a framework for future analysis. The analysis is adequate for oil and gas lease sales. Any further development, including an exploratory drilling program, or the construction of the infrastructure necessary for development of an oil discovery, would require further NEPA analysis. The additional analysis would be based on specific and detailed information about where, what kind of activity that would occur, and would the activity result in the appropriate NEPA documentation for specific projects.

To meet the requirements of Section 404, the Clean Water Act, any future NEPA document would describe the project's components, identify the type and amount of wetlands; identify other waters affected by each alternative; describe anticipated impacts; and discuss mitigating measures that could minimize impacts to these resources. A list of permits and approvals likely to be required for any oil and gas operation is included in the IAP/EIS (Table II.F.1).

1334-002
Stipulation 70 (Alternative A-E), now Preferred Alternative Stipulation 67, requires that all activities be conducted to avoid or minimize disturbance to vegetation. Stipulation 22 (Alternatives A-E) was specific to the exploratory activities within the Goose Molting LUEA and has been deleted from the Preferred Alternative stipulations, because exploratory activities are not allowed in this area under the Preferred Alternative (Sec. II.C.1).

1334-003
Expanded consultation is addressed in Preferred Alternative Stipulation 30 regarding causeways, docks, artificial islands, and bottom-founded structures.

1334-004
Stipulation 27 (Alternatives A-E) and Preferred Alternative Stipulation 30 address development likely to be associated with coastal support facilities. Developments such as marine docking or staging areas could impact the marine environment. Seawater-treatment plants also could fall under the design and monitoring guidelines discussed in this stipulation. As discussed in more detail (please see Responses 1652-031, 1660-081, 1664-011), Alpine is used only as a representative design for current and foreseeable North Slope projects. As stated in Section IV.A.1.b(1), "Future petroleum projects in the NPR-A are likely to encounter unique geologic and environmental conditions that will require site-specific engineering strategies."

1334-005
The purpose of the IAP/EIS is to analyze reasonable and foreseeable development scenarios for future activities in the northeastern NPR-A. A detailed review of the Alpine development project is beyond the scope of discussion in this IAP/EIS. Coordinated investigations to identify gravel sources in the NPR-A have yet to be conducted. However, the BLM believes these investiga-tions will be done if discoveries are made in the sale area. Reconnaissance mapping of surficial deposits is in numerous studies published by the USGS, and citations to these studies will be included in the final version of the IAP/EIS.

1334-006a
Expanded consultation is addressed in Preferred Alternative Stipulation 58 regarding abandonment and rehabilitation. Stipulation 60 (Alternatives A-E), specific to the Goose Molting LUEA, was deleted given that no leasing and no oil and gas facilities will be authorized in this area under the Preferred Alternative.

1334-006b
Section II.F.5 has been revised to address COE permitting authority relevant to development in the planning area

1334-007
Please see Response 1334-001.

1334-008
Please refer to Section II.F and Table II.F.1 for a discussion of the management responsibilities, the authorities of various Federal and State agencies, and the NSB for permits and approvals.

1334-009
Figures III.C.7-2 and IV.A.5-1 have been amended so that the proposed Badami, Tarn, Liberty, and Alpine pipelines are labeled and general locations indicated. The Northstar pipeline route is generalized as a specific route for the proposed pipeline. The specific route has not yet been permitted or decided upon; three different routes are under consideration. Although the Liberty pipeline has not yet been permitted, one route is under consideration.

1334-010
The purpose of Section IV.A.1.b (1)(b), Natural Gas, is to present an overview of the North Slope gas situation, and explain why the reasonable and foreseeable development scenario for the NPR-A does not include natural gas production. The decision is based on the following: (1) currently, there is no transportation system to handle the production of North Slope gas; (2) none of the systems that have been studied are economically viable under current price and marketing conditions; (3) when a gas transportation system is constructed, there are ample proven gas reserves to fill the system for decades; and (4) exploration and development targeting undiscovered resources is unlikely until excess capacity occurs in the existing system. The possibility of new technologies, gas-to-liquid (GTL), for gas transportation is discussed in this section; however, this technology is unproven at the scales required for North Slope gas production. Proven reserves are approaching 35 trillion cubic feet. An evaluation of the future gas-transportation systems from the North Slope is beyond the scope of this IAP/EIS. This EIS deals specifically with foreseeable activities in the NPR-A.

1334-011
The Alaska Natural Gas Transportation System (ANGTS) is one of several options that someday might bring North Slope gas to market. Historically, market conditions and resource-owner interests have delayed construction of a gas-transportation pipeline. However, Alaska is moving towards legislation that would enable special financial terms regarding tax burdens and stimulate interest in the construction of a major gas line. The State's tax-relief efforts are focused on the Trans-Alaska Gas System (TAGS). Resource owners are seriously considering TAGS as the primary gas-transportation system. Even so, TAGS has major obstacles to overcome before any construction occurs.

Of all the gas-transport systems under consideration, the TAGS would require the greater degree of transportation-related construction. Unlike the alternate ANGTS, TAGS would be constructed entirely inside Alaska and most likely follow the existing pipeline route. The TAGS would require a gas-liquefaction plant at tidewater as well as a fleet of dedicated LNG tankers. The ANGTS route would separate from the existing TAPS corridor in interior Alaska, follow the Alaska Highway corridor into Canada, and eventually join the Canadian gas-pipeline network. Another method of moving North Slope gas to market would be to convert produced gas into stable liquids and add them into the TAPS crude-oil stream. The gas liquids would be shipped with the crude to different ports of destination. This developing GTL technology could eliminate the need for a new gas pipeline. The cumulative case analysis focuses on the gas transport system (TAGS) that is the most likely to be constructed. Coincidently, the TAGS is the greater agent of potential environment effects, particularly within Alaska. Therefore, the overall cumulative-case analysis of potential gas-transportation systems will not understate potential impacts. For the authors review and consideration, a discussion of the ANGTS and GTL systems have been included in Table IV.A.5-1b.

For an additional discussion on this subject, please see Response 1334-010.

1334-012
The text in Section IV.B.4 has been rewritten to clarify that different tundra vegetation types require differing snow depths to ensure protection. The 6 inch criterion for snow depth in Stipulation 20j (Alternatives A-E; Preferred Alternative 24i) is a compromise between maximizing protection, but it still allows seismic work to occur.

1334-013
Editorial changes suggested by the commenter have been made where appropriate.

1334-014
Various means of presenting the information in Section IV were examined. We tried to strike a balance between repetition and readability without flipping to previous sections in order to comprehend what is being said.

1334-015
Please see Response 1334-001.

1334-016
Editorial changes suggested by the commenter have been made where appropriate.

Alaska State Legislature

1335

Official Business
Fax: (907) 465-3472

Speaker of the House of Representatives

State Capitol
Juneau, AK 99801-1182
(907) 465-3720
(907) 465-2689

March 5, 1998

Mr. Gene Terland, NPR-A Project Coordinator
Bureau of Land Management
Alaska State Office
222 West 7th Avenue
Anchorage, AK 99513

Dear Mr. Terland,

This letter is to support Alternative E in the Draft Environmental Impact Statement for the NPR-A Northeast Corner. The NPR-A was originally established as an oil reserve, therefore, all BLM lands in this areas should be made available for oil and gas leasing.

Alternative A through D do not allow access to the critical Barrow Arch, the area with the greatest potential for hydrocarbon discovery. Unless this access is granted, we fear that interest in the upcoming NPR-A lease sale will wane.

We believe that technological and operational advances in the exploration, production, and transportation of hydrocarbons in the arctic, as proven over the last 20 years, will allow operators to meet Alaskans' high standards for the protection of wildlife and habitat.

Alternative E allows for the highest and best use of the NPR-A. Thank you for considering these comments.

Sincerely,

Gail Phillips

Representative Gail Phillips
SPEAKER OF THE HOUSE

GP:brg

1398

Doreen Lampe
1920 Takpuk St.
Barrow, AK 99723
dlampe@co.north-slope.ak.us
Barrow Restoration Advisory Board

001

Long term funding for immediate clean up of facilities, once they are no longer productive to the profit making organizations.
After witnessing the Air Force and Navy in the Dew Line operations. I would like to see the NPRA acitivities and operations cleaned up in a more timely fashion. Most of all I would like to see funding for the rehabilation of all the sites set aside in advance. Waiting for the funding to rehabilatate industrial sites take too long. With all the money the State is making, the State hardly invest any transportation needs we have on the North Slope. So I would at least like to see the money set aside to be on hand for immediate rehabilation of NPRA sites that prove to be non-productive. Any other money made from lease sales, should go directly to help with the education of the children of the North Slope Borough. The State needs to look at Classroom additions in all of our villages. The high school students, need to be seperated from junior high, and elementary levels. Where does all the money go that the State makes off of all the Lease sales from the North Slope? WHERE???? We need the State to evaluate how much money have they made off the North Slope, Versus How much money have they actually spend on education in the North Slope? Why has it taken so long to clean up our lands during the Dew Line era? Umiat is one of the worst sites in the North Slope, that has industrial contamination. Where are you when we need you? Take TAKE TAKE, from the North SLope!
When are you going to be responsible and clean up what you take, and give something in return?

It is OK to release my name and street address to the public with these comments.
Yes, I want to be added to the BLM's NPR-A mailing list.

Entered on: 3/9/98

1398-001
The BLM has mandatory bonding regulations in place for any geophysical exploration work (43 CFR 3154.1) and lease development work (43 CFR 3134.1 and other citations noted therein). There is no regulatory provision for waiving such bonding requirements under any circumstances. Further, the Alaska Oil and Gas Conservation Commission requires that an additional mandatory bond be posted with them for any oil and gas well drilled.

For a company to obtain a lease, bonding requirements must be met so that the funds are available for the cleanup of any activity, should the company fail to do so upon abandoning that activity. Money made from lease sales will be distributed in accordance with existing laws (42 U.S.C. § 6508). Please also see Response 1669-017.

1411

Richard Wood
MP 111 Glenn Hwy. HC03 Bx 8487
Palmer, Ak 99645
psrpw@uaa.alaska.edu
self

Dear Mr. Terland and the NPR-A Planning team:

I wish to commem briefly on the use stipulations for exploration in the USNPR. Although I am not an expert in the biological sciences involved here, I hope you can hear and consider my words.

There are many new insights daily as to the importance each species brings to the overall scheme of the earth's life system. From bacteria to plantlife, from protozoa to humans, the complexity of evolutionary movement and nuance of chance are far greater than the cumulative human experience can fathom. Therefore, I believe that extreme care should be taken with such fragile, slow-recovering areas as the North Coast and its indigenous animalia. Remember that your stewardship decisions are affective for all time.

In that light, I feel these points bear further scrutiny.

Road construction and heavy maintence executed only at non- critical times relative to the wildlife clock. 001

Design air transport system so as to minimize impact to area wildlife.

Expand no-fly zones to five kilometers from molting lakes and calving areas during critical times for helio- and winged aircraft. 002

Road setbacks are quite minimal-even if the speed limits are observed. Expanding the setback requirements does not appear to involve tremendous expense relative to the probable benefit to the waterfowl populations. 003

Insure quality monitoring and enforcement of these reqmts. 004

A checks and balance system in place regarding site-specific waivers for any activities in restricted areas.

Thank you for this opportunity to offer feedback on your work.

Regards, Richard Wood HC03 Bx 8487 Palmer, Ak. 99645

It is OK to release my name and street address to the public with these comments.

Entered on: 3/5/98

1411-001
The Preferred Alternative would not allow construction of permanent oil and gas facilities including roads in wildlife sensitive areas near Teshekpuk Lake (see Fig. II.C.1-6). Additionally, no surface-occupancy limitations are mandated in Preferred Alternative Stipulation 39 to protect all major river corridors that provide essential habitat for many wildlife species. Because of the many environmental limitations imposed by BLM, and similar mitigation measures used on State lands to protect vegetation, water quality, fish, wildlife and other surface resources, the oil and gas industry on the North Slope currently conducts, and we believe will continue to conduct, most major construction activities in the winter months.

1411-002
This comment is addressed in Preferred Alternative Stipulations 52 through 57.

1411-003
In areas that are available for leasing, the Preferred Alternative would not allow construction of any permanent oil and gas facilities in the sensitive goose-molting area surrounding Teshekpuk Lake. Moreover, permanent roads are strictly limited by the Preferred Alternative and stipulations (see Preferred Alternative Stipulation 48). Setbacks around many waterbodies that provide habitat for waterfowl have been expanded in Preferred Alternative Stipulation 39.

1411-004
Researching, monitoring, and enforcing permit stipulations/requirements are all key in not only ensuring compliance, but also in increasing our knowledge base (See Section II.F.7). Please also see Response 1194-010 .

1450

Oregon

DEPARTMENT OF FISH AND WILDLIFE

DIRECTOR'S OFFICE

February 17, 1998

Mr. Bruce Babbitt
U.S. Department of the Interior
Office of the Secretary
Washington, D.C. 20240

Dear Secretary Babbitt:

The Pacific Flyway Council wishes to express serious concerns regarding the potential leasing of certain portions of the Northeast Planning Area of the National Petroleum Reserve-Alaska for oil and gas exploration and development. Several of the lease sale area alternatives under consideration include the Teshekpuk Lake Special Area, a region of unique lakes and meadows that serves as a secure, traditional molting site for up to 68,000 geese, including Pacific brant from Canada, Russia and the Yukon-Kuskokwim Delta. Eventual development of oil and gas fields with associated structures and disturbance in or near this area could have significant, long-term impacts on unique habitats used by geese, and the condition and survival of molt-stressed brant. The Council raised these same concerns when the Teshekpuk Lake Special Area was proposed for leasing in the mid-1980s.

Given the unique ecological features of the Teshekpuk Lake area that sustain up to 22% of the Pacific brant population and other waterfowl, and the national and international public interest in the resources of the NPR-A, the Council provides the following specific recommendations:

1. The Draft EIS should specifically recognize the broad interests of stakeholders from other states, Arctic Canada, Russia, and Mexico in the migratory bird resources of the Northeast Planning Area, and assess the potential impacts of leasing and development on those interests. 001

2. The sensitive goose molting area should not be offered for leasing; it should not be open to construction of roads, pipelines, or other facilities; and seasonal human activity should restricted, as necessary, tu preserve the security of molting geese from disturbance and stress. 002

John A. Kitzhaber
Governor

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3. The Pacific Flyway Council also recommends that the Teshekpuk Lake Special Area be given permanent protection from future development by Secretarial designation. 003

The Pacific Flyway Council appreciates the opportunity to provide basic input to the draft EIS and will be following the concerns of the 11 western states throughout the EIS process.

Sincerely,

Jim Greer
Chairman, Pacific Flyway Council

cc: BLM State Director-Alaska
Director, USFWS
Pacific Flyway Council Members

1450-001
Statements indicating the expansive range of birds using the planning area, the types of stakeholders having interests in these birds, and some implications of international agreements concerning conservation and management of birds have been incorporated into Section III.B.4. Although a statement has been added to Alternative B (Sec. IV.C.8.b(5)) regarding this topic, an assessment of potential impacts of leasing and development on stakeholder interests would be difficult at this time. This is because of a lack of pertinent data on the use of the different species by specific user groups, and the correlation between bird losses on the northeastern NPR-A and decreased numbers in migration and wintering areas. Regarding molting geese, the Goose Molting Habitat LUEA is unavailable for oil and gas leasing under Alternatives A through D and the Preferred Alternative. This suggests that potential effects from this activity would not be large enough to significantly affect their use by local or distant user groups. The conduct of other activities when molting geese are present would be governed by stipulations that would prevent most disturbances. For example, if development proceeds (as stated in Alternative E) to allow oil and gas leasing in this area, stipulations governing activities during the period when molting geese are present would prevent most disturbances and most of the substantial effects that could affect their availability to user groups outside the NPR-A area. Likewise, a buffer specifying no surface occupancy is designated along critical portions of the Colville River to decrease access to the river and potential disturbance of raptors. The BLM does not expect population-level effects on shorebirds or passerines to result from the relatively small areas occupied either by oil and gas activity or other activities. Therefore, the impacts on stakeholders with interests in these groups is expected to be negligible.

1450-002
Please refer to the preferred alternative.

1450-003
Please refer to Section II.G for a discussion on why permanent protection by Secretarial designation was not considered. Also, please see Response 1851-058.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

1652

March 10, 1998

Reply To
Attn Of: ECO-088

Ref: 97-013-8LM

Gene Terland
Bureau of Land Management
Alaska State Office
222 W. 7th Avenue
Anchorage, Alaska 99513-7599

Dear Mr. Terland:

The Environmental Protection Agency (EPA) has completed it's review of the draft Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) for the Northeast National Petroleum Reserve-Alaska in accordance with our authorities and responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. The draft EIS evaluates five alternatives presently being considered as management options for approximately 4.6 million acres of land managed by the Bureau of Land Mangement (BLM) in the northeast portion of the National Petroleum Reserve-Alaska (NPR-A). The draft EIS does not identify a preferred alternative.

Based on our review and evaluation of the draft IAP/EIS, we have assigned the following ratings based on the potential environmental impacts of each of the alternatives and the adequacy of the impact statement in evaluating and disclosing the impacts of the alternatives:

ALTERNATIVE	RATING
A (No leasing in planning area)	**LO** (Lack of Objections)
B (Leasing available in roughly 50% of planning area)	**EC-2** (Environmental Concerns - Insufficient Information)
C (Leasing available in roughly 75% of planning area)	**EC-2** (Environmental Concerns - Insufficient Information)
D (Leasing available in roughly 90% of planning area)	**EO-2** (Environmental Objections -Insufficient Information)
E (Leasing available in entire planning area)	**EO-2** (Environmental Objections -Insufficient Information)

EPA has no objections with Alternative A, as it would result in the planning area remaining closed to potential oil and gas exploration and development and no major environmental impacts would be expected. We have environmental concerns with Alternatives B and C, as they would result in the opening of roughly 50 and 75 percent of the planning area to potential exploration and production, with potentially significant environmental impacts resulting in the open portion of the planning area. We have environmental objections to Alternatives D and E, in that they would result in the opening of 90 percent and 100 percent of the planning area to

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potential exploration and development, with potentially significant environmental impacts resulting throughout the planning area (particularly in the Teshekpuk Lake Watershed). We believe that additional information is needed in the EIS to understand the technical bases for stipulations proposed to protect resources within the planning area and how they would be implemented to ensure that those resources would be protected. We also believe that the EIS should provide additional information related to the roles and responsibilities of other permitting agencies in oil and gas exploration and development within the planning area.

A summary of our comments and an overall rating of EO-2 will be published in the *Federal Register*. We have enclosed a copy of the rating system used in conducting our review for your reference.

The issues/concerns that we believe should be addressed in the final EIS are discussed in greater detail in the enclosure to this letter.

We are interested in working closely with the BLM in successfully resolving the issues we have identified prior to the issuance of the final EIS. I urge you to contact Bill Ryan of my staff at (206) 553-8561 or Ted Rockwell in our Anchorage office (907-271-3689) at your earliest opportunity to discuss our comments and how they might best be addressed in the final EIS for the project.

Thank you for the opportunity to provide comments on the draft IAP/EIS.

Sincerely,

Richard B. Parkin

Richard B. Parkin, Manager
Geographic Implementation Unit

Enclosures

cc: Mary Weger, US ACOE
Philip Martin, USFWS
Jeanne Hanson, NMFS
Jack Winters, ADF&G

EPA Comments on the
Draft Integrated Activity Plan/Environmental Impact Statement
for the
Northeast National Petroleum Reserve-Alaska

Need for Action/National Energy Needs 001

Section I of the draft Environmental Impact Statement (EIS) suggests that leasing within the National Petroleum Reserve-Alaska (NPR-A) is being considered at this time due to increased interest by the oil industry as their infrastructure has come closer to the Reserve's boundary. The draft EIS also states that NPR-A is to be developed "in a manner consistent with the total energy needs of the Nation," as specified in the Naval Petroleum Reserves Production Act (NPRPA) of 1976. Acknowledging the current level of interest in pursuing leasing within the Reserve, we believe that the EIS must provide the public and the decision maker with a discussion/analysis of how exploration/production activities on the Reserve align with the energy needs of the country. Without such a discussion/analysis, it is not clear that opening up the northeast portion of NPR-A to leasing and potential production would be consistent with NPRPA. We believe that this discussion/analysis is a fundamental element of the debate over opening the Reserve to exploration and development (identified on page 1-9 as a significant issue to be addressed in the EIS). Consequently, we recommend that Section I of the EIS be expanded to include a discussion/evaluation of "total energy needs of the Nation" and describe how oil exploration and potential production within the Reserve is consistent with those needs.

Effects Analyses 002

We find it extremely difficult to determine the potential environmental consequences of each alternative presently under consideration, and how the impacts would differ under each alternative. The effects analyses (see Section IV) are presented in a fashion that is extremely difficult to extract relevant information which would allow the reader to compare the consequences of each alternative in a meaningful way. Of the 264 pages dedicated to the "environmental consequences" of the alternatives, we were unable to find a single table or figure that allows the reader to understand the environmental impacts of any of the alternatives or how the environmental impacts of the alternatives compare to each other. The "wall-to-wall" text contained in Section IV (much of which appears to be redundant) is not an effective mechanism for revealing the environmental consequences of the alternatives under consideration. We recommend that Section IV of the EIS undergo a significant amount of editing and reformatting to make the EIS useful as a disclosure document and consistent with the implementing regulations for NEPA (see 40 CFR 1502.7).

It is difficult to determine if the effects analyses assume that all stipulations presented in Section II would be applied. Because we view the stipulations as the mitigation measures that are intended to protect resources in the planning area, we would expect the EIS to reflect impacts with the implementation of all stipulations. However, the use of language such as "to the degree they (stipulations) are implemented" and "the absence of these stipulations may increase adverse 003

effects" in the document suggests that all stipulations would not be implemented if leasing and/or development was to take place on the Reserve. As a result, we cannot determine if, or when, stipulations would be applied to activities on the Reserve and how the effects analyses reflect this apparent incomplete implementation of the stipulations. We recommend that the EIS be revised to clearly indicate the level of stipulation implementation that has been assumed in the impact analyses. 003

Stipulations 004

General Comments

We find that the discussion in the first paragraph on page II-27 related to how the stipulations presented in the draft IAP/EIS would be applied is confusing and misleading. The EIS indicates that the majority of the stipulations presented "would be applied to applicable individual permits." We interpret this statement to mean that the applicable stipulations would be attached only to permits that would be issued by the Bureau of Land Management (BLM), as the Bureau has no authority to define conditions that would be attached to permits issued by other agencies under other legal authorities. Oil and gas leasing and development requires permits and/or approvals from other agencies and permit conditions imposed by these agencies may be significantly different, and potentially more stringent, than those presented in the draft EIS. To ensure that the public and the decision maker are provided with a clear understanding of how the stipulations would be applied, we recommend that the EIS explicitly identify the BLM permits to which the stipulations would be attached, as well as identify permits that would potentially be issued by other agencies. The EIS should also clearly indicate that permit conditions imposed by other agencies could be significantly different from stipulations imposed by the BLM.

We recommend that the final set of stipulations presented in the final IAP/EIS and adopted in the Record of Decision (ROD) consistently use the word "shall" to clearly indicate that the elements of each stipulation must be met. As presently written, the stipulations presented in the draft EIS are inconsistent in their use of "shall," "will," and "would." 005

Numerous stipulations contain quantitative values (e.g., buffer widths/setback distances, water depths) or dates that directly affect how and when stipulations would be implemented. We were unable, in most cases, to locate information in the EIS that provides the basis for these values and dates. We recommend that the EIS include the basis for the specified values and dates contained in the stipulations to allow for meaningful evaluation of impacts to the resources they are intended to protect. 006

In general, it is unclear that the appropriate resource/regulatory agencies will be consulted as decisions are made on how stipulations are to be implemented. In some cases, multiple agencies are identified, in others a single agency is identified, and in other cases, no consultation is required. We recommend that the final set of stipulations ensure that the appropriate agencies (those with resource protection and/or regulatory/permitting responsibilities) are consulted in the determination of how the stipulations on BLM permits are implemented. The stipulations where it is not clear if the appropriate agency(ies) has/have been identified, are highlighted below.

Management Restriction Waiver f. (page II-27) - We strongly object to the inclusion of this waiver in the IAP/EIS because it suggests that BLM has sole authority to determine when activities in wetlands would be allowed without ensuring that impacts have been evaluated using the avoidance, minimization and mitigation hierarchy contained in the EPA 404(b)(1) Guidelines (see 40 CFR 230). Pursuant to Section 404 of the Clean Water Act, discharges of dredged or fill materials to waters of the U.S. (including wetlands) would require permits from the Army Corps of Engineers that have been developed in a manner consistent with the EPA 404(b)(1) Guidelines. Consequently, because BLM does not have the authority do exempt activities in wetlands from regulatory requirements, we strongly recommend that this waiver be deleted from the IAP/EIS. 007

Stipulation 1 - We recommend that the IAP/EIS include a list of feasible precautions that shall be used to avoid attracting wildlife to food and garbage. 008

Stipulation 13 b. - Should the Alaska Department of Environmental Conservation (ADEC) be the only agency consulted when determining if discharge of drilling muds to reserve pits would be allowed? 009

Stipulation 13 c.(4) - Should ADEC be the only agency consulted? 010

Stipulation 16 - How and who will determine the lakes to be used for water withdrawal drawdown? How, when, and by whom will lakes be surveyed to determine their depth or if fish exist in them? Will there be consultation with the appropriate resource and regulatory agencies before lakes would be drawn down? What is the basis for the "7 foot drop" criteria being used in this stipulation, and how does it relate to protection of water quality? The EIS should be revised to clearly address these questions. 011

Stipulation 17 - We recommend that an analysis/demonstration of hydrologic functions be required and approved, with appropriate consultation, before any water is extracted from lakes used by molting geese that are located within the Goose Molting Habitat LUEA. 012

Stipulation 20 - We recommend that this stipulation clearly identify the elements that are applicable to wintertime travel exclusively and those applicable to summertime travel. As presently written, it is not clear which stipulations would apply to wintertime and summertime conditions. 013

Stipulation 20 j. - Based on information discussed on page IV-B-3, this stipulation does not mitigate damage to vegetative cover and water quality. Consequently, we recommend that this stipulation be modified to require a minimum snow depth of 10 inches (in combination with 12 inches of frozen tundra) before ground operations shall commence to ensure that water quality is adequately protected. 014

Stipulation 24 - This stipulation appears applicable only to Alternatives D and E. We recommend that the EIS clarify the alternative(s) to which this stipulation applies. 015

Stipulation 25 - Should FWS be the only agency consulted? 016

Stipulation 26 - Should the State and NSB be the only entities consulted? 017

Stipulation 27 - Should the State and NSB be the only entities consulted? 018

Stipulations 30, 32, 33, 34 - Should FWS be the only agency consulted? 019

Stipulations 37, 38 - Should ADF&G be the only agency consulted? 020

Stipulation 39 - This stipulation indicates that, on a case-by-case basis, essential pipeline and road crossings will be permitted through setback areas when no other suitable sites are available. We recommend that this stipulation be modified to include consultation with the appropriate regulatory and resource agencies prior to approving such crossings. 021

Stipulation 40 - Should ADF&G be the only agency consulted? 022

Stipulation 41 - We were unable to determine the basis for the 500 foot setbacks from active floodplains and fish-bearing lakes. Consequently, we are unable to determine the effectiveness of this stipulation in protecting water quality and fish habitat. The basis for the setbacks and their implications on water quality and fish habitat should be discussed in the EIS. 023

Stipulation 42 - Should ADF&G be the only agency consulted? 024

Stipulation 43 - Placement of fill in waters of the U.S. (including wetlands) would require a permit from the Army Corps of Engineers (Corps). Activities impacting waters of the U.S. should be coordinated with the Corps and EPA. 025

Stipulation 44 - For disclosure purposes and to allow the public and decision maker to evaluate their effectiveness of Best Management Practices (BMPs) in protecting water quality, we recommend that the BMPs be included as an appendix to the EIS. 026

Stipulation 48 - Placement of fill in waters of the U.S. (including wetlands) would require a permit from the Army Corps of Engineers (Corps). Activities impacting waters of the U.S. should be coordinated with the Corps and EPA. 027

Stipulation 59 - Consultation should include all agencies involved in approving the abandonment of a development. This includes the Army Corps of Engineers and EPA. 028

Spill Prevention and Response

Page IV-A-38 of the draft EIS references BLM oil and gas operating regulations found in 43 CFR 3160. It also briefly mentions EPA regulations found in 40 CFR 110 and 300 and states that these regulations deal with responses to spills or releases of oil and gas. It does not,

however, appear that the authors have read or researched these regulations.

Although the National Contingency Plan (NCP) is contained in 40 CFR 300 and it does indeed focus on response to spills, it is the blueprint of the Federal Government's Response System and contains the roles and responsibilities of governmental agencies in a spill response role. A more applicable regulation to cite would be 40 CFR 112 which contains regulations requiring industry to prepare and implement both Spill Control and Countermeasures Plans, (SPCC) and Facility Response Plans (FRPs). Requirements for SPCCs have existed since the mid 1970s and are intended to ensure that industry-operated facilities design and implement oil spill prevention measures which will prevent spills to waters of the U.S. including Tundra environments. The FRP regulations are relatively recent (1995 time frame) and arose from the passage of the Oil Pollution Act of 1990 (OPA 90) which amended the Clean Water Act and has had a major impact upon all aspects of the oil industry. OPA 90 and EPA's implementing FRP regulations require owners and operators of oil exploration and production facilities to prepare and implement oil spill contingency plans which among other things are intended to insure that the responsible parties for a spill area sufficient prepared to respond to a "worst case discharge" with adequate numbers of personnel, equipment and methods approved by federal and state On-Scene Coordinators. 029

The EIS also states "that if a spill or release of petroleum fluids or chemicals used on the petroleum industry on the lease, unit, or participating area, BLM has the authority to cite the operator and direct the cleanup. However, a cleanup will be done in cooperation with other Federal or State Agencies." The EIS also mentions ADEC's role as the On-Scene Coordinator for state lands and the USCG's responsibility for directing response to spill cleanup on areas of tidewater and the seas. No mention is made of EPA's role. 030

The National Contingency Plan established lead and supporting roles for federal agencies. The NCP established an On-Scene Coordinator who is an EPA official for the "inland zone" and a U.S. Coast Guard Officer for the "coastal zone." On the Alaska North Slope, the U.S. Coast Guard and the U.S. Environmental Protection Agency have a long standing Memorandum of Agreement that delineates the Inland zone and Coastal zones for spill response purposes. A 1,000 yard boundary line drawn inland paralleling the coast's mean low water line separates the coastal zone from the inland zone.

With the passage of OPA 90, the Federal On-Scene Coordinator is empowered as the single individual representative of the President of the United States, and responsible for directing all oil spill response activities. OPA 90 mandates that "area" contingency plans be developed by federal and state agencies to identify working relationships and organizations used to manage a governmental spill response, be it the oversight and direction of a responsible industry spiller, or a government lead response action. Industry response plans must be consistent with government area plans.

In Alaska, the EPA and U.S. Coast Guard, in their capacities as the lead federal agencies

for spill response, have developed a Unified Plan for Preparedness to Oil Discharges and Hazardous Substance Releases with the State of Alaska's Department of Environmental Conservation. Additionally the Alaska Regional Response Team, of which the Department of Interior is a member, has adopted the Unified Plan and its contents and organizational concepts. The Unified plan uses the Incident Command System and Unified Command for management of a spill. The ICS allows for multi-jurisdictional incidents to be coordinated and responded to in an efficient and unified fashion. For oil spill response, the Unified Commanders is the Federal On-Scene Coordinator (either a USCG or EPA official), the State On-Scene Coordinator (ADEC representative), a local On-Scene Coordinator (North Slope Borough representative) and the spiller or responsible party (RP) who normally fills the role as incident commander. Land management agencies such as BLM would be invited to participate in appropriate sections such as operations and planning and on a Multi-Agency Committee (MAC) if the incident warranted the formation of one. This structure and response organization has been used statewide since the Exxon Valdez spill and has been a model for National adoption. 030

In light of the proceeding description of the government's response system and current regulations, EPA recommends that the EIS be rewritten to accurately reflect oil spill prevention and response requirements for the industry and government.

Development Scenarios 031

We believe that the use of the ARCO Alpine Development is inappropriate for evaluating potential development in NPR-A because the Alpine development is located in a unique location; the active floodplain of a major arctic river. This location has virtually nothing in common with the area of NPR-A being considered in this EIS. If the Alpine development is appropriately sensitive to the Colville River delta that it is situated within, then it is not an analog for on-shore development in NPR-A. Conversely, if it is appropriate for NPR-A development then it is not appropriate for development in the Colville River delta. It's only utility is in the concept of minimizing environmental impact.

We caution the BLM in using Alpine as an example to follow in that there is no consideration of the distances from major infrastructures that development in NPR-A will have to face. Stipulation 27 mentions causeways, and docks, yet there is no such provision in the Alpine development scenario. Thus, the following questions remain unanswered: how will large equipment be brought to NPR-A? Where will docks, causeways, or other structures need to be built? Where will equipment, supplies, etc. be stored between drilling seasons? What equipment? What supplies? Fuel, lubricants, other chemicals? The industry already is reluctant to move drill rigs the 35 miles back to the Deadhorse area from the eastern prospects such as Sourdough. Industry wished to keep as much equipment as possible on location so that they are not subject to the need to build ice roads to move equipment from Deadhorse to their exploration site. This provides them a few extra days of drilling a few extra days instead of traveling. NPR-A development is even further away from the existing development where storage could occur. It is only reasonable to assume that industry will want to store their exploration equipment and some supplies in NPR-A. These issues/questions, and their associated impacts, should be addressed in 032 033

the EIS. 033

Wetlands

The draft IAP/EIS contains no information related to wetlands, amount of wetlands, location of wetlands, types of wetlands, or functions of wetlands. A functional assessment of wetland resources, such as the Hydrogeomorphic Methodology (HGM) agreed to by EPA, DOI, DOAg and DOD, needs to be conducted for the areas being considered for lease sale and used to develop reasonable mitigative measures and stipulations. This information should be included in the EIS. 034

Table II.D.2 does not discuss wetland types, locations, amounts, or functions. The comparison table on page II-48 should reflect such in formation. 035

Gas Transportation

Pages IV-A-7 and IV-A-44 discuss TAGS (Trans Alaska Gas System) but make no mention the ANGTS (Alaska Natural Gas Transportation System), which does have current permits and could begin construction at any time. We recommend that the EIS be revised to include a discussion of the ANGTS. 036

Sand and Gravel Mines

Stipulations 34 and 40 discuss sand and gravel mines, yet the EIS does not identify any potential sources of sand and gravel or problems related to the availability of these resources. It is not possible to assess the effects to the environment from any of the alternatives without addressing the issue of how much gravel will be needed and where it is going to be mined. The consequent effects of these mines, which could potentially be measured in hundreds or thousands of acres destroyed, would represent long term effects that should be addressed in the EIS. 037

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements Definitions and Follow-Up Actions*

Environmental Impact of the Action

LO - - Lack of Objections

The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

1652-001
The NPR-A currently is open for oil and gas leasing. One of the purposes of the IAP/EIS is to determine if any of the area being studied should be offered in oil and gas lease sales at this time. Please refer to Response 1851-002.

1652-002
Table II.D.2 on p. II-41 to 71 in the draft IAP/EIS contained a comparison of impacts for the alternatives and cumulative case. We also tried to balance between redundancy and readability in the draft. Although we have not completely reformatted Section IV, we have redrafted it to clarify the potential environmental consequences specific to each alternative and distinguish the impacts under each alternative.

1652-003
The IAP/EIS has been rewritten to clarify that it reflects the impacts that could occur with the implementation of all stipulations. The stipulations will be implemented if leasing and/or development takes place. Please refer to the preferred alternative.

1652-004
The BLM revised the introductory paragraph in Section II.C.7, Stipulations, to clarify the relationship between the Preferred Alternative stipulations and subsequent permits issued by the BLM and other agencies. In summary, all Preferred Alternative stipulations attach to oil and gas leases and appropriate related permits (e.g., exploration plan, operations plan), and other permits BLM issues to authorize activities (e.g., commercial guiding). Other agencies have authority to issue independent or more stringent permit conditions. Table II.F.1 lists the permits and approvals commonly required in conjunction with an oil and gas leasing operation. Questions about a specific permit and the agency that will issue a specific permit will be determined by law and regulation. Specific State permits are required when the State has primary authority, under Federal or State law or regulation, for enforcement of the provision in question.

1652-005
Stipulations have been amended to consistently use the word "shall."

1652-006
Most quantitative values (e.g., no surface occupancy setbacks/distances and water depths) and periods of time identified in the stipulations were developed by the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop held May 21-22 in Fairbanks, Alaska. Proceedings of the workshop were provided in Appendix E of the draft EIS. Other values and dates, not related to geese and caribou, were derived from extensive consultation with technical fish, wildlife, water, lands, subsistence, and environmental protection experts during development of the draft EIS. Scientific literature used to develop values and dates are provided in the bibliography at the end of the EIS. Values and dates are based on the best available scientific information and expertise with the objective of protecting surface resources. In very limited instances (e.g., see Preferred Alternative Stipulation 41), quantitative values and dates represent a consensus position derived from consultation with policy and technical experts. Authors have relied upon all sources of information available in evaluating impacts.

1652-007
The comment is addressed in Section II.7, Stipulations, in the discussion regarding the Exceptions Clause.

1652-008
Given that there is considerable variation in what would be considered an appropriate precaution for different permitted activities and sizes of groups (e.g., oil and gas operation vs commercial guiding operation), we believe it is more practical, yet still effective, to use the process outlined in Preferred Alternative Stipulation 2 to notify permittees about the availability of a list of acceptable precautions from the Authorized Officer. Specific precautions will be attached to a permit as part of the written procedures.

1652-009
The USEPA has been added as a consulting agency in Preferred Alternative Stipulation 4.

1652-010
The USEPA has been added as a consulting agency in Preferred Alternative Stipulation 5.

1652-011
The GIS database for the planning area includes the location and relative depths of all lakes (see Fig. III.A.2.a-2). If there is no current information regarding the presence of fish in a particular lake for which a request for withdrawal has been submitted, the proponent (e.g., lessee) must demonstrate that no fish are present.

Preferred Alternative Stipulation 20 has been amended to include consultation by all appropriate Federal, State, NSB regulatory and resource agencies.

The 7-ft water depth standard for water withdrawal is based on the professional experience and technical position of the Alaska Department of Fish and Game that 7 ft of water is adequate to protect overwintering fish populations and water quality within the planning area. Water withdrawal to <7 ft affects water quality by creating a hypersaline environment. The 7 ft standard is consistent with current State of Alaska permitting stipulations for oil and gas operations on the North Slope. Authorization by the Authorized Officer of a withdrawal of water from a nonfish-bearing lake <-ft deep requires consultation with appropriate Federal, State, and NSB regulatory and resource agencies .

The discussion of Stipulation 16 (Alternatives A-E) under Effectiveness of Stipulations in Section IV.C.4 (Water Quality) has been revised to clearly address these questions.

1652-012
This comment is addressed in Preferred Alternative Stipulation 21 by amending the earlier stipulation to require consultation with appropriate Federal, State, and NSB regulatory and resources agencies in conjunction with any request for water withdrawal within the Goose Molting LUEA. In addition, Stipulation 21 puts the lessee on notice that an analysis/demonstration of the hydrologic functions of any lake in question may be required by the Authorized Officer prior to approval of the withdrawal.

1652-013
This comment is addressed in Preferred Alternative Stipulation 24. Specifically, the stipulation now clarifies that the listed restrictions apply to overland moves, seismic work, and other similar use of heavy equipment on unroaded surfaces "during the winter season." All summer season restrictions are listed in other sections. Specific restrictions (e.g., Preferred Alternative Stipulation 24b and k) are included, because they provide a date restriction that could overlap with the typical winter activity period (i.e., May 5 in the foothills and May 15 in the northern coastal areas).

1652-014
The reference to Walker in Section IV.B.3 of the draft EIS has been deleted. Relevant scientific literature and experience of the State of Alaska on other North Slope leases supports a minimum snow depth of 6 inches.

1652-015
Comment addressed in revisions to Stipulation 24 (Alternatives A-E). The stipulation applies only to Alternatives D and E, because they are the only Alternatives that propose leasing in the Caribou LUEA.

1652-016
Stipulation 24 (Alternatives A-E) has been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

1652-017
Stipulation 26 (Alternatives A-E) has been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

Preferred Alternative Stipulation 29 has been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

1652-018
Stipulation 27 (Alternatives A-E) has been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

Preferred Alternative Stipulation 30 has been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

1652-019
Stipulations 30, 32, 33, and 34 (Alternatives A-E) have been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

The second sentence in Stipulation 30 (Alternatives A-E) referencing consultation requirements has been deleted from the Preferred Alternative stipulations, and the remaining sentence has been combined with other text into Preferred Alternative Stipulation 32.

Stipulations 32, 33, and 34 (Alternatives A-E) have been deleted from the Preferred Alternative stipulations, because no leasing is proposed in the Goose Molting LUEA.

1652-020
Stipulations 37 and 38 (Alternatives A-E) have been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

Preferred Alternative Stipulations 36 and 37 have been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

1652-021
Stipulation 39 (Alternatives A-E) and Preferred Alternative Stipulation 39 have been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

1652-022
Stipulation 40 (Alternatives A-E) and Preferred Alternative Stipulation 40 have been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

1652-023
The 500 ft setback in Stipulation 41 (Alternatives A-E) was intended to apply to all those fish and nonfish-bearing waterbodies not otherwise provided for in Stipulation 39 (Alternatives A-E). Stipulation 41 (Alternatives A-E)has been amended in Preferred Alternative Stipulation 41 to clarify this point.

It is the consensus of fisheries, water quality, and spill prevention specialists from the State of Alaska, BLM, and MMS that 500 ft is adequate to protect water, vegetation, fish, and other resources adjacent to all waterbodies not identified in Stipulation 39.

1652-024
Stipulation 42 (Alternatives A-E) and Preferred Alternative Stipulation 42 have been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

1652-025
All activities impacting waters of the U.S. will be coordinated with the U.S. Army Corps of Engineers and the USEPA.

1652-026
The comment is addressed in Preferred Alternative Stipulation 44, amended to provide examples of Best Management Practices (BMP's) that the Authorized Officer would consider during the permit review process. The BLM will consult with appropriate Federal, State, and NSB regulatory and resource agencies to compile a current list of acceptable BMP's and will consult with appropriate agencies during permit review to determine which BMP's may be most appropriate for any site-specific activity.

1652-027
All activities impacting waters of the U.S. will be coordinated with the U.S. Army Corps of Engineers and the EPA.

1652-028
Stipulation 59 (Alternatives A-E) has been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

Preferred Alternative Stipulation 58 has been amended to include consultation with all appropriate Federal, State, and NSB regulatory and resource agencies.

1652-029
Section IV.A.4 has been revised to reflect the information presented in this comment.

1652-030
Section IV.A.4 has been revised to reflect the information presented in this comment.

It also must be noted that BLM is not just acting as a land management agency in the case of oil and gas. Under 43 CFR 3160, BLM is responsible for regulations that govern operations associated with the exploration, development, and production of oil and gas deposits from leases issued or approved by the United States. This means that BLM will play an integral role in spill planning and response activities.

1652-031
The BLM believes that ARCO's Alpine project is appropriate as a general model for future development in the NPR-A for numerous reasons: (1) It represents the state-of-the-art design for remote development on the North Slope. Note that BP's Badami project, now under way, includes many of the same design features (no permanent gravel road, minimal footprint, use of extended reach drilling technology, subsurface injection of wastes, among others). (2) We expect that new fields of this approximate size (Alpine, 365 million barrels; Badami, 120 million barrels) to be more typical of future NPR-A developments than the Kuparuk River field with >2.6 billion barrels of oil. (3) Although other NPR-A projects will not be located in the floodplain of a major river such as the Colville River, most of the coastal plain is characterized as "tundra wetlands" covered with "lakes, ponds, and slow-moving streams" (see Fig. III.A.2.a.2). Development design and seasonal logistics of new developments in the northeastern NPR-A could be closely comparable to Alpine.

1652-032
The Alpine project is not a strict template for all future developments in the NPR-A. It merely represents current design innovations and technology used for recent North Slope development. We assume that this current technology will be used initially and then perhaps modified with actual experience in the NPR-A.

The logistics for operations in the NPR-A will be very site specific, and general considerations are discussed in Section IV.A.1.b(2)(d). Presumably, a staging base will be constructed to support one or more oil field projects. The staging base will require an airstrip capable of handling large capacity aircraft in addition to

marine loading facilities if on the coast. The actual location of the staging site cannot be determined until oil discoveries are made. A variety of equipment and supplies will be transported to and temporarily stored at the staging site. An exhaustive list of possible equipment and supplies cannot be given without knowing the location and specific purpose of the staging area (support winter exploration drilling; support construction activities; support operations of producing fields).

1652-033
The commenter's observation is essentially correct and follows the general description contained in Section IV.A.1.b(3)(c). Industry is not likely to move drilling equipment and supplies for multi-year operations back to the original staging area near Deadhorse. Drilling equipment might be stored at remote drill sites on pilings, or moved back to local staging sites (see Response 1652-032). For single-season drilling or seismic surveys, all equipment and supplies are likely to be removed from the exploration site before the end of winter. Complete removal of equipment and supplies likely would occur in the case of a dry exploration well.

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1652-034
Please see Response 1334-001.

1652-035
Please see Response 1334-001.

1652-036
This comment is addressed in Responses 1334-010 and 1334-011.

1652-037
At this time, detailed investigations to identify gravel sources in the NPR-A have not been conducted but presumably will be, if discoveries are made in the sale area. Reconnaissance mapping of surficial deposits is contained in numerous studies published by the USGS, and citations to these studies is included in the final IAP/EIS. Estimates of total gravel requirements are provided in Section IV.A.1.b(4)(c), but gravel sources and impacts associated with gravel mining and transportation are given in other sections of the IAP/EIS. It is highly unlikely that "hundreds to thousands of acres" will be "destroyed" by gravel mining operations for the following reasons: (1) surface mining activities will be conducted during winter months to facilitate ground transportation; (2) estimates of gravel requirements for a single field are approximately 1 million cubic yards and could be collected from a single site covering approximately 20 to 50 acres; (3) isolated fields are likely to seek gravel sites in the vicinity to minimize costs; (4) alternative construction designs will be used to minimize gravel requirements because of the lack of identified sources in the NPR-A; and (5) gravel mine sites will be reclaimed or used for other approved purposes.

Alaska Oil and Gas Association

1656

AOGA

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Anchorage, Alaska 99503-2035
Phone: (907)272-1481 Fax: (907)279-8114
Judith M. Brady, Executive Director

March 12, 1998

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MAR 12 1998

NPR-A Planning Team
Bureau of Land Management
Alaska State Office (930)
222 West 7th Avenue
Anchorage, Alaska 99513-7599

Comments on the Northeast National Petroleum Reserve-Alaska Draft Integrated Activity Plan/Environmental Impact Statement

Dear NPR-A Planning Team:

The Alaska Oil and Gas Association (AOGA) has reviewed the Northeast National Petroleum Reserve-Alaska Draft Integrated Activity Plan/Environmental Impact Statement and offers the attached detailed comments.

AOGA is a trade association whose 19 member companies represent the majority of oil and gas exploration, production, transportation, refining and marketing activities in Alaska.

If you have any questions regarding the attached comments or if you would like additional information, please call me at (907) 272-1481.

Sincerely,

JUDITH BRADY
Executive Director

Attachment

ALASKA OIL AND GAS ASSOCIATION DETAILED COMMENTS ON THE

NORTHEAST NATIONAL PETROLEUM RESERVE-ALASKA

DRAFT INTEGRATED ACTIVITY PLAN/ ENVIRONMENTAL IMPACT STATEMENT

March 12, 1998

The Alaska Oil and Gas Association (AOGA) is a trade association whose 19 member companies account for the majority of oil and gas exploration, production, transportation, refining and marketing activities in Alaska.

AOGA presents the following detailed comments on the U. S. Department of Interior Northeast National Petroleum Reserve-Alaska Draft Integrated Activity Plan/Environmental Impact Statement (DEIS).

AOGA points out that there is a large body of relevant data, based on more than 20 years of operational experience and scientific study in fields on the North Slope, which support the conclusion that the Northeast Planning Area of the NPR-A can be leased for oil and gas exploration and development with appropriate operational restrictions and stipulations to fully mitigate adverse impacts.

In the following detailed comments, AOGA will cite additional relevant information and studies which should be considered as the Department of the Interior makes its final decisions about the details of operational restrictions and stipulations necessary to fully protect fish, wildlife and subsistence.

GENERAL COMMENTS

Discovery of new oil and gas resources is critical to the United States and the State of Alaska.

- Currently, Alaska North Slope production provides more than 20 percent of all oil produced in the United States today.
- Oil production from the North Slope is declining. Since its peak ten years ago, of more than two million barrels per day, production from the North Slope has declined approximately 35 percent to its current level of about 1.3 million barrels per day. North Slope production is expected to continue to decline at a rate of approximately 10 percent per year.
- U. S. petroleum imports (crude and products) in January, 1998 were nearly 10 million barrels per day, more than 50 percent of total domestic petroleum deliveries. Politically unstable Persian Gulf imports represented nearly 18 percent of total U.S. imports.
- Without question, this level of dependence on foreign oil is inconsistent with the United States' national security interests.
- The Naval Petroleum Reserves Production Act (NPRPA) of 1976 provided that the development of the NPR-A should occur in a manner consistent with the total energy needs of the Nation. There is no dispute that the Nation's dependence on foreign oil has continued to grow at an alarming rate since 1976 when Congress directed expeditious leasing in NPR-A.

- Leasing must begin now in order to maximize the likelihood that additional discoveries will be on production in the early years of the next the century. It is critical to bring additional discoveries on line in order to maximize production from existing fields and to ensure efficient use of existing infrastructure.
- Additional oil production will support continued operation of existing fields at Prudhoe Bay and Kuparuk and will extend efficient use of the Trans-Alaska Pipeline infrastructure.
- The Trans-Alaska Pipeline System (TAPS) throughput peaked at two million barrels per day in 1988, and by mid-1997 throughput was down to 1.35 million barrels per day. DEIS at III-A-2-5. The lower mechanical and economic limits for viable TAPS operation are between 200,000 and 500,00 barrels per day.
- "[B]ased on the declining production trends of existing North Slope fields, and without changes to economic conditions or the discovery of major new oil fields, the operational limits of TAPS could be reached within the next 20 years...Renewed interest in the Petroleum Reserve is an important part of strategies to maintain the TAPS throughput within acceptable limits." DEIS at IV-A-20-21.
- Production forecasts for remaining reserves in known and developed North Slope fields are estimated to be 7.85 Bbbl and 15.95 Bbbl. The State of Alaska estimates that the combined production from the presently operating and to-be-developed fields will decline to a daily output of 442 MMbbl in 2015. DEIS at IV-A-39.

Oil and gas development in the Petroleum Reserve will have significant economic benefits.

- The United States economy will benefit significantly from additional domestic oil production. In addition to lease bonuses and royalty revenues, oil production from NPR-A will help reduce America's trade deficit.
- American dependence on foreign oil plays a significant role in trade deficits. In 1996, the United States ran a trade deficit of minus $161.9 billion, the value of oil imported during that period was $66 billion.
- Oil production from NPR-A would provide economic benefits to the State of Alaska. BLM has estimated that making the entire Planning Area available for lease will provide the State of Alaska with $2.5 to $10 million in annual royalty revenue; $1.5 to $3 million in property taxes; and $1.25 to $5 million in severance taxes annually.
- The Native community will benefit from increased oil production. The BLM has estimated that making the entire Planning Area available for lease will provide the North Slope Bornugh with $6 to $12 million in property taxes annually and will provide significant employment opportunities to North Slope Borough residents.

Significant oil and gas deposits exist in the Planning Area within 25 miles of the coast – the High Prospectivity Area.

- AOGA supports allowing access to lands within the Petroleum Reserve which are considered to have the highest potential for oil and gas resources.

- **Public documentation shows that all of the North Slope commercial hydrocarbon occurrences exist along the subsurface feature known as the Barrow Arch, a portion of which contains the Prudhoe Bay and Kuparuk River oil fields. Over the last ten years, 1.5 billion barrels of oil have been discovered along the Barrow Arch.**
- **The main prospective area, within the Petroleum Reserve, lies along the south flank of the Barrow Arch within approximately 25 miles of the present coastline.**
- Despite extensive drilling, no commercial oil or gas accumulations have been found anywhere on the North Slope south of this approximately 25 mile wide coastal strip. Forty-two separate prospects have been drilled to date and have resulted in six sub-economic gas discoveries, one sub-economic oil discovery and zero developments.
- Alternatives E through A make available decreasing amounts of acreage within the Planning Area for lease.

  Alternative E - 100% available for lease sales;

  Alternative D - 89% available for lease sales

  Alternative C- 74% available for lease sales

  Alternative B - 43% available for lease sales

  Alternative A - 0% available for lease sales

- BLM acreage numbers are, however, misleading. Significant oil and gas deposits are most likely to be found in the high prospectivity area, shown in the DEIS along the southern flank of the Barrow Arch. Thus, although Alternative B proposes to make available forty-three (43%) of the land in the Planning Area for lease, it will make available only twenty-three (23%) of the high prospectivity area.

- Only Alternatives E and D provide access to more than half of the high prospectivity area.

➢ **Only Alternative E provides access to all of the high prospectivity area.**

BLM should make all of the Planning Area available for lease. Operational restrictions and stipulations in the DEIS protect the environment, wildlife and traditional lifestyles.

- Leasing the entire high prospectivity area will not have significant adverse impact on the environment or the inhabitants of the Planning Area.

- Appropriate operational prescriptions and restrictions – the stipulations – will fully protect wildlife and traditional uses of the land.

- The DEIS proposes more than 80 operational restrictions and requirements, designed to eliminate any detrimental impact from oil and gas development. Some of these stipulations would attach to activities throughout the Planning Area. Other stipulations would be applicable only to oil and gas development or only to activities in specific portions of the Planning Area. The stipulations were based upon a substantial number of scientific studies conducted over an extended period of time. BLM specifically notes in the DEIS that the stipulations are based on "present" knowledge and "could evolve" over time.

- It is well established that North Slope oil and gas activities have evolved considerably since initial production at the Prudhoe Bay oil field.

➢ **The DEIS recognizes the major recent advances in oil industry technology on the North Slope, including many environmental mitigation and protection measures.**

- Best management practices such as new drilling technology, vastly reduced surface footprints and advances in waste management have considerably reduced the potential for environmental impacts.

- For these reasons it is appropriate to make the entire Planning Area available for leasing.

➢ **Under no circumstances should the area designated with high oil potential in Figure III.A.1.a(3)-11 be deleted. This area is essential to ensure that there will be a viable future oil and gas sale. We strongly believe that this area can be leased with little to no adverse impact to the environmental or the subsistence uses in the area.**

- We believe that current mitigation measures and stipulations on oil and gas activities will successfully mitigate potential impacts and will provide full protection of wildlife, sensitive habitat and subsistence resources of the area.

- The stipulations included in the DEIS apply only to the "general" decision to make the Planning Area, or particular portions of the Planning Area, available for oil and gas leasing. Additional "site specific stipulations may result from subsequent site-or authorization-specific environmental analysis" or "during further NEPA analysis for any oil and gas activity" "including an exploratory drilling program or construction of the infrastructure necessary for development of an oil discovery" would require "further NEPA analysis" based on specific and detailed information about the type and location of the proposed activity. DEIS at II-27-II-35.

COMMENTS ON THE DEIS

I. INTRODUCTION

➢ **AOGA strongly supports the recognition of the DEIS that the National Petroleum Reserve-Alaska (NPR-A) has historically been designated by both the United States President and the Congress as a petroleum reserve.**

- In 1923, President Warren G. Harding signed an executive order establishing Naval Petroleum Reserve No. 4, a 37,000 square mile (23 million acre) area on the North Slope of Alaska, for the purpose of oil and gas production for military use during wartime by the United States Navy. The Naval Petroleum Reserve in Alaska was the fourth area so "reserved."
- From 1944 and 1953, the United States Navy drilled 45 shallow core-test and 36 test wells. A second Navy NPR-4 exploration program began in 1972 and from 1974 to June, 1977, the Navy completed seven test wells outside the Barrow area.
- In April, 1976, the Naval Petroleum Reserves Production Act of 1976 (NPRPA) transferred jurisdiction over the Petroleum Reserve from the Navy to the Department of Interior and directed that Naval Petroleum Reserve No. 4 and the other three Naval Petroleum Reserves be developed "in a manner consistent with the total energy needs of the Nation" (P. L. 94-258). The NPRPA renamed the Petroleum Reserve the "National Petroleum Reserve in Alaska" and lifted the restrictions that prohibited production for purposes other than wartime use.
- Recognizing that development of the Petroleum Reserve would not be feasible for several years because of the absence of transportation, Congress withdrew all land located within the Petroleum Reserve "from all forms of entry and disposition" under the public land and mineral leasing laws, and required extensive study and exploration of the Petroleum Reserve's petroleum, environmental, wildlife and scenic resources. The law also prohibited any "development leading to the production of petroleum from the reserve.. until authorized by an Act of Congress."

- Exploration of the Petroleum Reserve was assigned to the U.S. Geological Survey (USGS) on June 1, 1977. The USGS continued to explore and evaluate NPR-A petroleum resources, develop and produce gas from the South Barrow gas field, and rehabilitate areas from previous exploration efforts.
- From 1977-1981, the USGS completed 21 widely scattered test wells and established several areas of oil and gas potential.
- In 1980, the Department of Interior Appropriations Act rescinded the withdrawal of Petroleum Reserve lands, lifted the ban on activities related to petroleum development and directed the Department of Interior to conduct "an expeditious program of competitive oil and gas leasing" in the Petroleum Reserve (P. L. 96-514).
- The DOI Appropriations Act also provided that the detailed studies conducted pursuant to the NPRPA would satisfy the requirements of the National Environmental Policy Act (NEPA) for the first two million acres proposed to be leased.
- The Bureau of Land Management (BLM) conducted its first and second lease sales in January and May, 1982, respectively. Because subsequent sales were not exempt from NEPA compliance, BLM initiated an Environmental Impact Statement (EIS) for additional oil and gas leasing in the Petroleum Reserve.
- The preferred alternative identified in the Final EIS was to conduct five additional sales between 1983 and 1987 of an average of two million acres per sale. A third sale was held in July, 1983 The fourth lease sale was held July, 1984 offered 64 tracts totaling 1.5 million acres and attracted no bids. A fifth sale, scheduled for August 1985, was canceled. All leaseholds in the NPR-A have now expired.

- Some 28 exploration and delineation wells have been drilled in the Northeast Planning Area and a considerable amount of geologic investigations, including seismic research, has already been conducted. Much of the information resulting from this work is referenced or included in the DEIS.

- State of the art oil exploration technologies, such as 3D seismic, as well as more efficient production techniques, make it much more likely that commercial hydrocarbons can now be discovered in the Northeast Planning Area.

II. ALTERNATIVES

- AOGA strongly supports Alternative E.

➢ **Alternative E is the alternative which is most consistent with the land management regime Congress prescribed for the National Petroleum Reserve-Alaska and is therefore supportable by AOGA.**

- The only Alternative that realistically addresses the primary focus of the DEIS to analyze the potential use of the Planning Area for oil and gas leasing is Alternative E.

- Alternative E allows the opportunity for oil and gas leasing in the entire Planning Area, but leaves the timing and extent of individual lease sales to the BLM.

- Furthermore, Alternative E includes numerous stipulations designed to address environmental and subsistence concerns.

Stipulations address and fully mitigate the impacts on wildlife and traditional use.

AOGA points out that there is a large body of relevant data, based on more than 20 years of operational experience and scientific study in fields on the North Slope, which support the conclusion that the Northeast Planning Area of the NPR-A can be leased for oil and gas exploration and development with appropriate operational restrictions and stipulations to fully mitigate adverse impacts.

AOGA believes that all stipulations and operational restrictions should be based on sound scientific information.

In the detailed comments, AOGA will cite additional relevant information and studies which should be considered as the Department of the Interior makes its final decisions about the details of operational restrictions and stipulations necessary to fully protect fish, wildlife and subsistence.

Goose Molting --

- Lakes North and East of Teshekpuk Lake support large concentrations of molting geese from late June to mid-August.

- Four species of geese, Brant, Greater White-Fronted Geese, Snow Geese, Canada Geese, from Canada, Siberia, and Alaska annually depend on this area to provide necessary food and protection during the flightless summer molt. Numbers build up to 70,000 geese in the area Northeast of Teshekpuk Lake.

- During molt, flightless geese are particularly sensitive to disturbance.

- Although these geese use about 200 lakes in this area, the majority of activity is concentrated on about 30+ lakes.

- Expressed concerns center on the potential for typical oil field activity (construction and operational noise and aircraft overflights) to sufficiently disrupt normal feeding behavior and prevent geese from building necessary energy reserves to complete molt and prepare for fall migration.

- Alternative E goose stipulations would require: 001

  Buffers of no entry for 3,280 feet around high use goose lakes and 1,640 feet around low use lakes;

  Stop construction activity June 18 to August 20;

  Stop helicopter traffic June 15 to August 20;

➢ **While buffers along high use goose molting lakes may be appropriate, buffers should be based on sound scientific information.**

➢ **Current practice and studies show that the 1,640 feet buffer proposed around <u>all</u> goose-molting lakes is more than sufficient to ensure protection of geese and to eliminate disruptions of normal behavior.**

- These proposed stipulations--limiting construction activity, helicopter traffic and providing a 1,640 foot buffer--will be effective in mitigating any potential impacts to molting geese and other waterfowl.

➢ **Numerous special studies have been conducted to monitor the effects of oil field disturbance on nesting, molting, and brood-rearing geese. Studies, conducted in cooperation with the USFWS and EPA, designed as long term assessments of pre-development, construction, and operational data on the overall impacts to geese and swans from noise, traffic, and facility presence and activity concluded that these monitored activities did not change the overall extent or nature of use of the developed areas by waterfowl.**

- Most behavioral changes to stress were mild reactions, and most reactions occurred within 700 to 1000 feet from the stress.

- Seasonal waterfowl densities, distributions, and abundance patterns, including during nesting and molting, <u>were not changed</u> at any of the study areas.

- The proposed stipulations were developed based on research and anticipating activity similar to that seen in Prudhoe Bay. Many of the new technologies that would be applied in National Petroleum Reserve-Alaska will further reduce the minor (small number of mild reactions) and localized alterations (within 700 to 1000 feet) in goose behavior.

➢ **Smaller footprints, overall and seasonally reduced presence and activity, reduced traffic and aircraft movements, will reduce overall goose impacts substantially, so that oil and gas exploration and development can occur within the goose molting area without disturbance to these birds.**

Caribou Migration and Calving--

- The Teshekpuk Lake Caribou Herd generally calves around, but usually north of, Teshekpuk Lake, and winters south of the Lake.

- Some caribou biologists theorize that the presence and general activity of an oil field could lead to the long term stress of female caribou with young calves, and the eventual shift in calving away from this stressful activity; however, current data and literature does not support this theory.

- The general movement of all caribou around Teshekpuk Lake is a further concern. The presence of the Kogru River (actually a wide inlet of Harrison Bay) on the east and other large surface lakes on the west of Teshekpuk Lake restrict the caribou migration between their summer and winter ranges to two land passages of about 6 miles wide on each side of Teshekpuk Lake.

- Appropriate stipulations and mitigation measures such as strict traffic controls between May 20 and August 20, road/pipe separations of 500 feet; and a three-year caribou monitoring study prior to development to ensure most effective facilities location to ensure unimpeded passage of caribou can eliminate detrimental impacts on caribou or calving success in the Teshekpuk Lake area and/or migration patterns around the Teshekpuk Lake.

➢ **The conclusion of a 1994 Alaska Caribou Steering Committee (comprised of State/Federal/North Slope Borough/Industry representatives) was that road/pipe separations of 500+ feet and five foot minimum pipe heights are <u>fully effective</u> in providing unimpeded caribou passage across pipelines and roads. The DEIS (pages IV-F-12 and 13) concurred with this finding. (The Final Report to the Alaska Caribou Steering Committee by LGL Alaska Research Associates, Inc., entitled "Mitigation of the Effects of Oil Field Development and Transportation Corridors on Caribou", is attached).)**

➢ **AOGA believes from multiple studies over the past 30-years that caribou distribution and movement will be unaltered under Alternative E.**

  ➢ **Previous oil field studies have shown caribou cows with newborn calves (up to three weeks in age) occur at reduced densities within 1 to 2 miles from roads with moderate levels of traffic.**

  ➢ **Other caribou do not avoid roads at any time.**

  ➢ **After calves are older than three weeks, this road avoidance is abated.**

  ➢ **Road corridor avoidance by caribou cows with newborn calves also can be fully prevented by implementing traffic controls, such as those proposed in the DEIS, during this sensitive four to five week period (not all calves are born at the same time).**

Endangered and Threatened Species–

- The endangered Bowhead whale occurs seasonally in the Beaufort Sea adjacent to the Planning Area.

- The threatened Spectacled eider, and possibly the Steller's eider, occurs seasonally within the planning area.

➢ **The protective stipulations identified by the DEIS are adequate to assure that detrimental impacts to endangered and threatened species are minimized or eliminated.**

- With respect to the Spectacled eider and, possibly Steller's eider, protective stipulations will ensure that any negative impacts are minimized. The same protective stipulations placing seasonal restrictions on air traffic in the goose molting LUEA will minimize the disturbance to eiders from May to September, when they are present in the Petroleum Reserve, so that Alternative E will cause no greater disturbance to breeding and nesting eiders than Alternative B. In addition, stipulations related to waste disposal will prevent attraction of the eider's predators.

- While increased marine vessel traffic and over flights may result in temporary avoidance behavior by the Bowhead whale, the DEIS appropriately concludes that no stipulations are necessary to ensure that the Bowhead is protected.

Fish–

- The stipulations offered in the DEIS generally are appropriate for protection of fish resources, although the large set-asides (buffer strips) around lakes and streams seem excessive to protect fish and do not reflect current study and literature.

➢ **Experience and studies in the Prudhoe Bay region do not indicate that adverse effects on fish have resulted from siting structures close to lakes and streams.**

- Experience in the Prudhoe Bay region indicates that causeway development impacts in the delta of the Sagavanirktok River have been benign. Fish freely move through the breaches in the Endicott Causeway, and around its seaward face; no fish blockage occurs. Water exchange occurs through the breaches and freshwater flow circulates past both sides of the structure from the Sagavanirktok Delta distributaries.

➢ **Locations of coastal development structures should be judged individually, based on such considerations as fish species present, geographic location of the structure, size and other information.**

Subsistence– 002

AOGA agrees with the DEIS conclusion that generally with protective stipulations, oil exploration and development will not impact subsistence.

- However, AOGA strongly disagrees with the conclusion that "even with the protective stipulations, development associated with Alternative E may likely cause long term displacement of caribou from their preferred habitats" causing their pursuit by subsistence hunters to become more difficult if animals shift their distribution further away from Nuiqsut.

➢ **Neither scientific study, nor experience, nor the DEIS' own findings support this conclusion.**

This conclusion is based on the assumption that: 002

a) Petroleum Reserve developments will be multiple in number;

b) all developments will occur in the general calving area; and

c) that traffic from these operations will cause caribou to be displaced within 1.86 to 2.48 miles from field roads.

The cumulative impact from this traffic displacement is judged by the DEIS to eventually cause a permanent shift in distribution, which would cause subsistence hunters to travel farther to get to caribou.

➢ **The DEIS displacement conclusion is based on an invalid assumption of the detrimental impacts of current design and mitigation and is over-stated.**

- The DEIS expected displacement shift and any resulting hardship to subsistence hunting success should not occur.

- The displacement shift recorded in the Kuparuk Field, which is the support for this DEIS conclusion, occurs only for cows with newborn calves younger than three weeks in age. All other groups of caribou, including bulls and yearlings, do not show any avoidance of roads nor any "displacement shift." Further the observed shift for cows and newborn calves away from traffic roads disappears after calves mature past three weeks in age. There are no other recorded displacements in all other seasons by any caribou age or sex groups.

- Of equal importance, the recorded three week "displacement" of cows with newborn calves occurred in the Kuparuk oil field, which is a large complex of 40 drill pads, three processing centers, one sea water treatment plant, two camps, one jet airport, and many hundred trucks and larger vehicles moving around the 200 miles of road without any "caribou controls." Future oil

fields in National Petroleum Reserve-Alaska will not look like Kuparuk, nor will they generate the amount of traffic which can lead to the short-term displacement assumed in the DEIS. Traffic controls on vehicle movement can very easily be implemented, since future fields should have substantially fewer vehicles and fewer roads. 002

- The DEIS caribou stipulations correctly recognized that cows with calves are most sensitive to disturbance, thus proposed DEIS stipulations control the number of vehicle and airplane passes that can occur during the calving season.
- Alternative E subsistence stipulations would require stipulations to reduce interference with caribou movements:

  (1) Limiting types of surface occupancy permitted within 2 miles of Beaufort Sea to docks, causeways, and staging pads;

  (2) separation of pipelines and road by at least 500 feet, and 5 foot minimum pipe heights;

  (3) possibly requiring burial of all facilities, including pipelines, located within movement corridors between Teshekpuk Lake and the Beaufort Sea; and

  (4) restrictions on aircraft altitude from October through July. DEIS at IV-F-12-13.
- Appropriate controls, combined with other caribou stipulations, such as appropriate pipeline height and road/pipeline separations, allow caribou to maintain normal movement and behavior, and, thus, subsistence hunters from Nuiqsut should not be impeded in their pursuit of caribou.

  ➢ **Alternative E ensures no interruption of traditional uses of the land. Access to traditional hunting and fishing areas have been guaranteed and will be enforced by a Subsistence Advisory Panel.**

General–

- The provision in the DEIS which allows the AO to modify or waive stipulation provisions in certain instances is essential. However, the list of the specific instances which provide for consideration of such waivers should add the following (DEIS at II-27): 003

  g. if the proponent of an activity demonstrates to the satisfaction of the AO that a modification or waiver of a restriction is necessary in order to apply Best Management Practices (BMP's) to the situation.

- This addition enables a lessee to deal more effectively with a situation, rather than forcing adherence to a less desirable management practice.
- Some stipulations require specific actions of the lessee that would ordinarily occur only after the AO has made a specific determination. These stipulations should be revised to clarify the actions expected of the AO in order to avoid placing undue burden on the lessee. Examples are found in Stipulation #36 which states that the lessee "should place the pipeline on the appropriate side of the road." 004
- In order to avoid later conflicts, including possible pipeline relocations, the AO should first be required to concur with the lessee's decision concerning appropriate pipeline and road placement. Similarly, it should be specified that it is the AO who determines the date when seismic ground work may begin under Stipulation #20.j. 005

Detailed Comments on Stipulations

- **AOGA points out that there is a large body of relevant data, based on more than 20 years of operational experience and scientific study in fields on the North Slope, which support the conclusion that the Northeast Planning Area of the NPR-A can be leased for oil and gas exploration and development with appropriate operational restrictions and stipulations to fully mitigate adverse impacts.**

- **AOGA believes that all stipulations and operational restrictions should be based on sound scientific information.**

- **In the following detailed comments, AOGA will cite additional relevant information and studies which should be considered as the Department of the Interior makes its final decisions about the details of operational restrictions and stipulations necessary to fully protect fish, wildlife and subsistence.**

Solid and Liquid Waste Handling, Hazardous-Material Disposal and Cleanup

Stipulation 7. 006

Far oil and gas related activities, a Hazardous-Materials Emergency-Contingency Plan must be prepared and implemented priar to transportation, storage, or use of fuel. Staff shall be instructed in the procedures to follow. The plan should include a set of procedures to ensure prompt response, notification, and cleanup should hazardous substances be spilled or if there is a threat of a release. This plan should include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of Federal, State, and NSB contacts.

- **Comment:** The way the first sentence of this stipulation reads, it can be interpreted to mean that no use of any motorized craft which runs on fuel (e.g., rolligons, snowmachines, aircraft, etc.) is allowed until a contingency plan is prepared. Industry operates under Best Management Practices (BMPs) for fuel handling. We suggest that the first sentence be revised to clarify that BMPs will be used for fuel handling related to transportation vehicles. 006

Stipulation 9. 007

Fuel, other petroleum products, and/or other liquid chemicals designated by the AO, whether in excess of 660 gallons in a single tank or in excess of 1,320 gallons in multiple containers, shall be stored within an impermeable lined and diked area capable of containing 110 percent of the stored volume. The storage area shall be located at least 500 feet from any river, lake, or stream with the exception of small caches for motor boats and float planes. Material used as a liner must be capable of remaining impermeable during typical weather extremes expected throughout the storage period.

- **Comment:** This stipulation does not allow for mobile fuel storage. Typically seismic operations tow 4,000 to 5,000 gallons tanks on a sled-mounted skid. At times the tanks may be in the same location for a few days. It is not practicable to store these tanks in an impermeable lined and diked area. This stipulation should either exclude seismic operations or clarify what type of secondary containment is required for seismic operations.

Stipulation 12. 008

No refueling of equipment shall occur within 500 feet of the water's edge of any lake or stream, with the exception of refueling of motor boats, snowmachines, and float planes.

- **Comment:** Due to the numerous water bodies in the NPR-A, a 500-foot setback for refueling is excessive. The standard buffer of 100 feet should be employed. Also, the buffer is normally only required at fish bearing streams, lakes, and rivers. Also, helicopters, and airplanes on skis and wheels should be added to the list of exceptions. 008

Stipulations 17. 009

Within the Goose Molting Habitat LUEA (Fig. II.B.2), water extraction from any lake used by molting geese shall not alter hydrological conditions that could adversely affect identified goose-feeding habitat along lakeshore margins.

- **Comment:** AOGA requests that the AO allow water withdrawals in the Goose Molting Habitat LUEA, if after consultation with the U.S. Fish and Wildlife Service, it is determined that any alteration of the hydrological conditions will not have an adverse affect on the goose feeding habitat.

Stipulation 18. 010

Except for approved crossings, alteration of the banks of a waterway is prohibited. Clearing of willows along the riparian zone is prohibited.

- **Comment:** AOGA suggests that the language relating to willows be changed to read, "Movement of equipment through willow stands shall be avoided where possible." This would make the stipulation consistent with the standard stipulation used by the State, NSB, and Alaska Coastal Management Program.

Overland Moves and Seismic Work

Stipulation 19. 011

Seismic work is not allowed within 1,200 feet of any cabin or known, long-term occupied campsite without permission of the AO.

- **Comment:** Is there an inventory of long-term occupied campsites? This provision is unrealistic without an inventory tied to a map or legal description. Furthermore, seismic work is of extremely short-term duration during the winter season only and should pose no conflict with subsistence uses. This stipulation is unnecessary.

Stipulations 20. 012

The following restrictions apply to overland moves, seismic work, and any similar use of heavy equipment (other than actual excavations as part of construction) on unroaded surfaces:

a. Because polar bears are known to den predominantly within 25 miles of the coastline in the deeply drifted areas (6 feet or greater) adjacent to the high cut banks of drainages, seismic-program lines and overland moves should be aligned to avoid such areas by ½ mile, if feasible. The cutting or compaction of such drifted snow is prohibited within 25 miles of the Beaufort Sea. Activities are prohibited within 1 mile of known or observed polar bear dens; obtain locations from U.S. Department of the Interior, Fish and Wildlife Service, (907) 786-3800. Operators are encouraged to apply for a letter of authorization from USFWS to conduct activities in polar bear denning areas.

- **Comment:** There are 6 foot drifts of snow all along the rivers, if this stipulation is enforced, hundreds of square miles of land would be excluded. The word "compaction" should be clarified to not include incidental compaction such as occurs when driving a vehicle over a snow drift.

c. Travel up and down stream beds is prohibited to help avoid disturbance to riparian vegetation, stream-channel morphology, and resident fish populations. 013

➢ **Comment:** This stipulation could actually due more harm to stream beds since traffic moving near a meandering stream will have to make multiple crossings of the river instead of simply traveling along the river. Multiple crossings will increase risk of bank erosion, which is probably more damaging then incidental compaction. There is no scientific evidence that proves that vehicular compaction occurring causes enough freezedown to harm stream-channel morphology and resident fish populations. Also, this stipulation contradicts stipulation 20.d.

d. Crossing of waterway courses shall be made using a low-angle approach in order to not disrupt the natural stream or lake bank.

➢ **Comment:** This is a valid stipulation and consistent with general practices.

i. When multiple trips over the same trails are taken, vehicles will not utilize the same tracks, thereby reducing the possibility of ruts. 014

➢ **Comment:** This restriction should exempt ice roads. The very purpose of ice roads is to encourage vehicular access across a singular roadway to eliminate adverse impacts to the tundra. Also, although this is a good practice most of the time, some occasions warrant single file travel (e.g., when moving through willow stands, near river bluffs or deep lakes to increase safety, near archaeological sites, etc.). We suggest added the words, "if feasible" to this stipulation.

j. Ground operations are to begin only after the seasonal frost in the tundra and underlying mineral soils has reached a depth of 12 inches, and the average snow cover is 6 inches deep. 015

➢ **Comment:** Add "The exact date will be determined by the AO" to the end of this stipulation. 015

Oil and Gas Exploratory Drilling

Stipulation 23. 016

Exploratory drilling is not allowed within 1,200 feet of any cabin or known, long-term occupied campsite without written permission of the BLM.

➢ **Comment:** Similar to the comments in response to Stipulation #19, above, this language is difficult to apply without an inventory of long-term occupied campsites. Also, change "BLM" to "AO."

Facility Design and Construction

Stipulation 25. 017

Permanent oil and gas facilities (e.g., gravel roads, pads, airstrips, material sites), excluding pipelines, will not be permitted within a 1,640-foot buffer zone surrounding all goose-molting lakes, and within a 3,280-foot buffer zone surrounding all high-use lakes within the Goose Molting Habitat LUEA. Goose-molting lakes will be identified by the AO in consultation with USFWS.

➢ **Comment:** Delete the requirement that "permanent oil and gas facilities , excluding pipelines, must be set back at least 3,280 ft. from all high use lakes within the Goose Molting Habitat LUEA." There is no scientific rationale to support a buffer of this size. The 1,640 ft. buffer already proposed around all goose -molting lakes is more than sufficient to ensure protection of geese and to eliminate disruptions of normal behavior.

Stipulation 26. 018

To protect crucial caribou movement corridors for insect relief within 2 miles of the Beaufort Sea coastline including inlets and the Kogru River east of 152 36'30" west longitude, the only oil and gas permanent surface occupancy permitted will be that determined necessary by the AO, because other locations are either technically infeasible or economically prohibitive. Examples of structures likely to be considered necessary under these criteria may include, but are not limited to: (1) a staging area, causeway, or dock that requires a year-round road to the inland area; (2) a seawater-treatment plant and associated pipeline or road; and (3) a production pad and associated pipeline for an oilfield that cannot be produced from outside the 2-mile zone. Airports, camps, and some types of processing facilities are not likely to be considered necessary. When submitting a development and production plan that includes structures in this 2-mile zone, the lessee shall demonstrate to the satisfaction of the AO, in consultation with the State and NSB, the need for the location of permanent surface occupancy of structures within this zone.

Comment: This stipulation is not scientifically based. There are numerous studies of the impacts of oil and gas facilities on caribou that prove mitigative measures can be taken to off-set impacts (e.g., elevated pipelines).

Stipulation 27. 019

Causeways and docks shall not be located in river mouths or deltas. Artificial gravel islands and bottom-founded structures may not be located in river mouths or active stream channels on river deltas, except as provided in the paragraph above.

- **Comment:** Add the word "generally" to the beginning of the first sentence to make it consistent with the rest of the stipulation.

Stipulation 28. 020

Two narrow land corridors between Teshekpuk Lake and the Beaufort Sea have been identified as crucial caribou movement corridors. These areas lie northwest and east of Teshekpuk Lake (Fig. E-5). Within these two identified areas, the following requirements may be imposed.

d. No permanent surface facilities may be sited within a zone extending 4 miles eastward from the eastern shore of Teshekpuk Lake in the area between the lake and Kogru Inlet, as depicted on Figure E-5.

- **Comment:** After, "No permanent surface facilities, add, "excluding pipelines" to make it consistent with the rest of the stipulation (e.g., 28c which states, "Burial of pipelines may be required").

Stipulation 33. 021

Within the Goose Molting Habitat LUEA, oil and gas facility layout shall incorporate features (e.g., temporary fences, siting/orientation) that screen/shield human activity from view of any goose-molting lake, as identified by the AO in consultation with USFWS, within 3 kilometers.

- **Comment:** What is the scientific rationale for this stipulation? Industry asserts that placement of temporary fences, etc., would have more of a detrimental affect on geese and other wildlife, than the human activity that is being screened from their view.

Stipulation 36. 022

To minimize delay or deflection of caribou movements, lessees should place the pipeline on the appropriate side of the road (depending upon general caribou movements in the area).

- **Comment:** This stipulation is unnecessary since pipeline placement would be addressed during review of the Plan of Operations.

Stipulation 38. 023

At a minimum, above ground pipelines shall be elevated 5 feet, as measured from the ground to the bottom of the pipe, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. The AO, in consultation, with ADF&G, may make an exception if no feasible and prudent way exists to meet the requirement.

➢ **Comment:** Change the first sentence to read "shall be elevated at least five feet."

Stipulation 39. 024

Surface occupancy for the placement of any oil and gas facility, including roads, airstrips, and pipelines, will be prohibited in the Fish Habitat LUEA at the distances identified: . . .

➢ **Comment:** Change to read "surface occupancy for the placement of any permanent oil and gas facility."

Stipulation 40. 025

Gravel mining sites required for development activities will be restricted to the minimum necessary to develop the field efficiently and with minimal environmental damage. Where feasible and prudent, gravel sites must be designed and constructed to function as water reservoirs for future use. Gravel mine sites must not be located within an active floodplain of a watercourse unless the AO, in consultation with ADF&G, determines that there is no feasible and prudent alternative, or that a floodplain site would enhance fish and wildlife habitat after mining operations are completed and the site is closed.

➢ **Comment:** Because there is little to no gravel present in much of the planning area, it is likely that gravel for any authorized development will need to be transported into the NPRA from the closest feasible source outside NPRA, such as the Colville River area. Therefore, as proposed, this stipulation would preclude the lessee from obtaining gravel from the

Colville River floodplain, thereby necessitating long and expensive hauls of gravel from other upland sources on the North Slope. This additional haulage is likely to cause greater environmental impact than the simple act of removing gravel from a nearby floodplain source. This stipulation should be revised to eliminate the last sentence. 025

Stipulation 41. 026

Facilities, roads, airstrips, and pipelines will be sited out of the active floodplain of rivers and creeks with a minimum setback of 500 feet and 500 feet away from fish-bearing lake basins.

➢ **Comment:** Delete the word "basins" at end of sentence and conclude with the word "lakes." The intent is to protect the waterbody, not to setback development from an entire watershed.

Stipulation 43. 027

The natural drainage pattern will be identified prior to and maintained during and after construction. Any fill placed adjacent to a stream or lake will be armored to limit erosion from flooding or wave action. Cross-drainage structures will be sited, maintained, and properly abandoned to prevent impoundments or alteration of local or areawide hydrology.

➢ **Comment:** It does not make sense to require the use of armored fill adjacent to a stream or lake unless it is anticipated that a flood event will occur. Most lakes and many streams in the planning area do not experience annual flood events. Furthermore, the use of armored fill may alter riparian vegetation and pose barriers to wildlife use and passage. The application of armored fill should occur only within a documented floodplain area.

Stipulation 48. 028

Lessees must minimize the impact of industrial development on key wetlands. Key wetlands are those wetlands that are important to fish, waterfowl, and shorebirds because of their high value or scarcity in the region. Lessees must identify on a map or aerial photograph the largest surface area, including future expansion areas, within which a facility is to be sited or an activity is to occur. The AO will consult with USFWS to identify key wetlands. To minimize impact, the lessee must avoid siting facilities in the identified wetlands unless no feasible and prudent alternatives exist. Key wetland types included (but are not limited to) fish-bearing lakes and streams, riparian shrub, and the following classes described by Bergman et al. (1977): shallow and deep-Arctophila ponds, deep-open lakes, basin-complex wetlands, and coastal wetlands.

- **Comment:** Key wetlands have not yet been identified in the planning area. The process identified in this stipulation calls for identification of key wetlands by the AO in consultation with the USFWS. Actually, the US Army Corps of Engineers is the federal agency responsible for wetland permitting and identification, not the USFWS. The AO should be required to consult with the Corps, not the USFWS. Furthermore, there should be some reasonable time frame during which key wetlands must be identified by the AO in those areas proposed for development.

Stipulation 49. 029

No surface occupancy for oil and gas development will be allowed within 1 mile of known long-term cabins or long-term campsites, except that pipelines and roads would be allowed if they are no closer than ¼ mile from such cabins or campsites.

- **Comment:** Similar to Stipulation #19, this stipulation is impractical without an inventory of known long-term cabins or campsites.

Air Traffic

Stipulation 53. 030

Use of aircraft larger than a Twin Otter by authorized users of the study area, including oil and gas lessees, from May 20 through August 20 within the Teshekpuk Lake Caribou LUEA will be for emergency purposes only.

- **Comment:** Replace "Use" of with "Take-offs and landings" of aircraft larger than . . .

Stipulation 56. 031

Aircraft shall maintain 1,000 feet aboveground level (AGL) (except for take-offs and landings) over caribou winter ranges during October through May 15; 2,000 feet AGL over the Teshekpuk Lake Caribou Habitat LUEA during May 16 through July 31, unless doing so would endanger human life or violate safe flying practices.

- **Comment:** Change to read "Aircraft shall maintain an altitude of at least 1,000 ft AGL".

Stipulation 57. 032

Aircraft will maintain an altitude of 1,500 feet AGL when within ½ mile of peregrine falcon nests from April 15 through August 5, unless doing so would endanger human life or violate safe flying practices.

- **Comment:** Change to read "Aircraft will maintain an altitude of at least 1,500 ft AGL"

Oilfield Abandonment

Stipulation 60. 033

Roads, airstrips, and other gravel fill shall be removed or modified upon field abandonment so as to render them unusable for enhanced access into and within the Goose Molting LUEA.

➢ **Comment:** This stipulation is unnecessary. Stipulation #59 already provides for the removal of all facilities and the rehabilitation of the area upon abandonment. Furthermore, Stipulation #59 provides that the AO may determine it is in the best interest of the public to retain some facilities (i.e. road or gravel pad for caribou insect relief). 033

Subsistence

Stipulation 61. 034

During exploration, development, and production, the lessee shall monitor activity to determine its effects on subsistence and provide reports to BLM and the Subsistence Advisory Panel.

➢ **Comment:** Clarify the frequency the required reports must be submitted to the BLM and the Subsistence Advisory Panel.

Stipulation 63. 035

The lessee shall notify the AO of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns. When conflict arises between subsistence hunters and the lessee over what steps should be taken to address concerns, the AO will resolve the issue.

➢ **Comment:** Replace term "hunters" with the term "users."

Stipulation 64. 036

Prior to submitting an exploration plan or development and production plan, the lessee shall consult with the potentially affected subsistence community(ies) (e.g., Nuiqsut, Barrow, Atqasuk), the NSB, and the Subsistence Advisory Panel to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures that could be implemented by the operator to prevent unreasonable conflicts. Through this

consultation, the lessee shall make every reasonable effort to ensure that exploration, development, and production activities are compatible with subsistence hunting and fishing activities and will not result in unreasonable interference with subsistence harvests in the planning area. 036

➢ **Comment:** This stipulation presupposes that there will be potential conflicts with subsistence uses in the area. However, this is often not the case. Industry is proud of our close relationship on the slope with members of the resident Native community. We have been respectful of the need to maintain subsistence and traditional uses of the areas in which we are allowed to participate. The continued ability to communicate and seek advice from the Inupiat people has been a key to this cooperative relationship. Therefore, revise this stipulation as follows:

"Prior to submitting an exploration plan or development or production plan, the lessee shall consult with: a) the community(ies) in the subsistence area which includes the proposed area of operation; b) the NSB; and c) the Subsistence Advisory Panel. The lessee shall notify these parties of the siting, timing and methods of the proposed operation, including safeguards and other measures intended to avoid and/or minimize the impacts of the proposed operations on any subsistence activities in the area. The lessee shall make every reasonable effort to ensure that all exploration, development and production facilities are compatible with subsistence activities and will not result in unreasonable interference with subsistence harvest in the planning area".

Traditional Land Use Sites

Stipulation 66. 037

Lessees shall conduct an inventory of known traditional land use sites prior to any field activity. This inventory will include sites listed by the NSB's Inupiat History, Language, and Cultural Commission. Based on this inventory, the lessee shall develop a plan to avoid these sites and

to mitigate any damage to them that might occur. The plan will also indicate how access to the site by local subsistence hunters will be provided. Copies of the plan will be submitted to BLM and the Subsistence Advisory Panel with any permit application for exploration and development.

037

- **Comment:** Industry believes that the inventory of known traditional land use sites should not be the sole responsibility of the lessee. Therefore we suggest changing the wording of the first sentence to read, "Lessees will cooperate with BLM in conducting an inventory of . . . ."

Other Activities

Stipulation 69.

038

A letter of nonobjection from the surface landowner or the Native corporation(s) that have selected surface lands will be required to be on file with the AO before entry on those lands.

- **Comment:** Why is it necessary to obtain a letter of nonobjection for selected lands? This land is still owned and managed by the BLM. It is more appropriate to require that BLM notice the entity that has selected the land.

Stipulation 79.

039

Upon finding any cultural or paleontological resource, the authorized user, or his or her designated representative, shall notify the AO and suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the AO.

- **Comment:** Change to read "Upon finding any potential cultural or paleontological resource".

Stipulation 80.

040

Petroleum exploration and production activities must not be conducted within ½ mile of occupied grizzly bear dens, unless alternative mitigative measures are approved by the AO in consultation with ADF&G.

- **Comment:** Add identified by the ADF&G after the phrase "bear dens."

II. D. Comparison of Alternatives

041

The Comparison of Management Actions displayed in Table II.D.1., pages II-36 to II-37, states under Alternative E that the Umiat Recreation Site LUEA is unavailable for oil and gas leasing. However, this area is available for oil and gas leasing under Alternatives C and D. This statement also is inconsistent with the summary found in Table IV.F-1 where the Umiat Recreation Site LUEA is listed as available for oil and gas leasing.

CONCLUSION

- **Discovery of new oil and gas resources is critical to the United States and the State of Alaska. North Slope production, which currently accounts for more than 20 percent of U.S. domestic production, is declining and will continue to decline at a rate of about 10 percent per year.**
- **Oil and gas development in the National Petroleum Reserve-Alaska will provide jobs and significant economic benefits to the federal government and to the State of Alaska and the North Slope Borough.**
- **Geologic assessments show that significant oil and gas deposits exist in the National Petroleum Reserve-Alaska Northeast Planning Area within 25 miles of the coast - the high prospectivity area.**

- **More than 20 years of experience on the North Slope has shown that oil and gas activities can co-exist with healthy fish and game populations and that oil and gas leasing, exploration and development activities in the Planning Area can be conducted in a manner which will not interfere with subsistence uses in the Petroleum Reserve.**

- **AOGA strongly recommends allowing access to the high prospectivity area - the lands within the Petroleum Reserve which are considered to have the highest oil and gas potential.**

- **AOGA strongly supports selection of Alternative E, which allows full leasing of the Planning Area. Alternative E is the alternative which is most consistent with the land management regime Congress prescribed for the National Petroleum Reserve-Alaska. Congress stipulated that oil and gas exploration and development would be the dominant use of the Petroleum Reserve and authorized the Department of Interior to mitigate any adverse environmental impacts.**

- **AOGA believes that current operational practices and appropriate stipulations will fully mitigate potential adverse impacts of oil and gas leasing, exploration and development and will provide full protection of the wildlife, sensitive habitat and traditional subsistence uses of the land.**

- **AOGA supports full leasing in the Northeast Planning Area of the National Petroleum Reserve-Alaska and strongly recommends that the Secretary of Interior resume competitive oil and gas leasing in NPR-A as soon as possible.**

1656-001
The current practice and studies referred to in the comment were conducted in the Prudhoe Bay area. However, the use of studies of molting geese in the oil fields is questionable as a model for geese near Teshekpuk Lake. Teshekpuk Lake is predominantly a molting area for nonbreeding geese, and the majority of the oil field geese are broodrearing during molting. This may cause a difference in the behavioral responses or physiological state of the nonbreeding and breeding geese. The size of the flocks near Teshekpuk are larger than the oil field flocks, and larger flocks are believed to react more strongly to disturbances. Geese exposed to oil field activity as goslings are likely to be more habituated to human activity than geese that only molt at Teshekpuk and have no prior experience with oil field-related activities. The numbers and density of geese at Teshekpuk far exceed that of the oil fields.

Where it might be reasonable to expect that molting geese would react less to a disturbance than those at Teshekpuk, the oil field studies showed that the effects of road traffic occurred out to 300 to 400 m. For instance, a boat caused a strong reaction at 1000 m. Pedestrian traffic, showing effects out to 600 m, generally was more disturbing than road vehicle traffic. However, the studies used only existing pedestrian (oil field workers on gravel pads) traffic that did not occur at distances >600 m. No experimental effort was made to determine the effects of pedestrians at >600 m. Buffer widths in the Alternatives A-E stipulation assume that geese will forage within 100 m of lakeshores; therefore, buffers based on the studies must be at least 700 m to mitigate the effects of pedestrian activity. Anecdotal observations by researchers in the Teshekpuk Lake area have noted geese being disturbed by pedestrians across a lake >2,000 m wide.

There may not be data (from a scientifically designed experiment) to justify the 1 km buffer; neither is there scientific justification for stating that a 1 km buffer is not needed to prevent disturbances. The best empirical data suggest a buffer should be at least 700 m. Anecdotal data imply that ≥2,000 m may be necessary. The 1.0-km width is a tradeoff between this and the area of land that would be left open to development given the distribution of lakes in the Goose Molting LUEA. Readers also should note that the Preferred Alternative precludes leasing in the Goose Molting LUEA for the life of the current NPR-A IAP. As a consequence, Alternatives A-E Stipulations 25 (related to goose-molting buffers) and 50d (related to ground-transportation restrictions) have been deleted from the final list of stipulations applicable to the Preferred Alternative. All air traffic in the Goose Molting LUEA by BLM-permitted operations will continue to be limited (Preferred Alternative Stipulations 53 and 54) during the summer molting season because of the continued risk of noise disturbance from helicopters and other large and noisy equipment by all authorized users of the planning area.

1656-002
The passage quoted by the commenter cannot be found in the document, but based on the caribou analysis in Section IV.F.9, some level of displacement and residual adverse energetic effects is expected to occur on caribou. As the analysis states, herd dynamics of the Central Arctic Herd near Kuparuk do not necessarily apply to the Teshekpuk Lake Herd, which has distinctively narrow migration corridors. Even with some displacement, it is unlikely that these effects would cause long-term (i.e., 71 season) displacement of caribou or create long-term difficulties in Nuiqsut hunters' pursuit of caribou.

1656-003
Please see Response 1658-004.

1656-004
The comment is addressed by Preferred Alternative Stipulations 35 and 24j. The BLM has addressed the comment throughout the Preferred Alternative stipulations.

1656-005
Changes have been made in Preferred Alternative Stipulations 24j and 35.

1656-006
Comment is addressed in Preferred Alternative Stipulation 9.

1656-007
Comment is addressed in Preferred Alternative Stipulations 14 and 24m.

1656-008
Please see Response 1658-008.

1656-009
Comment is addressed in Preferred Alternative Stipulation 21.

1656-010
Please see Response 1658-010.

1656-011
Please see Response 1658-011.

1656-012
Comment is addressed in Preferred Alternative Stipulation 24a.

1656-013
Comment addressed by deleting Stipulation 20c (in the draft EIS) from the Alternatives A-E stipulations.

1656-014
Comment is addressed by Preferred Alternative Stipulation 24h.

1656-015
Comment is addressed by Preferred Alternative Stipulation 24j.

1656-016
Comment is addressed in part by Preferred Alternative Stipulation 26. The BLM also is inventorying long-term camps and cabins in the 1998 Summer season. Also, see Response 1658-011.

1656-017
Please see Response 1658-017.

1656-018
Please see Response 1658-018.

1656-019
Please see Response 1658-019.

1656-020
Please see Response 1658-020.

1656-021
Please see Response 1658-021.

1656-022
Please see Response 1658-022.

1656-023
Please see Response 1658-023.

1656-024
Comment partly addressed in Preferred Alternative Stipulation 39. Also, please see Response 1658-005.

1656-025
Please see Response 1658-025.

1656-026
Please see Response 1658-026.

1656-027
Comment is addressed in Preferred Alternative Stipulation 43.

1656-028
Comment is addressed in Preferred Alternative Stipulation 46.

1656-029
Please see Response 1658-011.

1656-030
Please see Response 1658-030.

1656-031
The comment is addressed in Preferred Alternative Stipulation 55.

1656-032
Comment is addressed in Preferred Alternative Stipulation 56.

1656-033
Please see Response 1658-031.

1656-034
This comment is addressed by Preferred Alternative Stipulation 59.

1656-035
This comment is addressed by Preferred Alternative Stipulation 61.

1656-036
Please see Response 1658-034. This comment has been incorporated into Preferred Alternative Stipulation 61.

1656-037
Please see Response 1658-035.

1656-038
Please see Response 1658-036.

1656-039
Please see Response 1658-037.

1656-040
Comment is addressed in Preferred Alternative 76. Also, please see Response 1658-038.

1656-041
Table II.D.1 has been corrected.

This Side Blank

Department of Energy
Washington, DC 20585

1657

MAR 12 1998

Mr. Jim Ducker
NPR-A Planning Team
Bureau of Land Management
Alaska State Office (930)
222 W. 7th Avenue
Anchorage, Alaska 99513-7599

Dear Mr. Ducker:

The Department of Energy (DOE) is pleased to provide comments on the Bureau of Land Management's (BLM) Draft Integrated Activity Plan/ Environmental Impact Statement (IAP/EIS) on Management of the Northeastern Portion of the National Petroleum Reserve - Alaska (NPR-A). This draft IAP/EIS represents an impressive effort which has produced a quality document.

The enclosed comments are provided from DOE's perspective as the lead Federal agency on National Energy Policy, encompassing our missions related to energy security, energy research and development, and global environmental improvement. DOE supports rational, responsible, environmentally protective development of domestic energy resources. Such development has important national benefits. DOE wishes to work cooperatively with the Department of the Interior in implementing a technology-based approach to the safe and productive development of NPR-A.

If you have questions about these comments or want to pursue the recommended interagency cooperative efforts, please contact Bill Hochheiser at (202) 586-5614 or Gay Leslie at (202) 586-6428. DOE looks forward to working with BLM on this vital undertaking.

Very truly yours,

Patricia Fry Godley
Assistant Secretary
for Fossil Energy

Enclosure

cc: Tom Fry, Deputy Director

Printed with soy ink on recycled paper

March 12, 1998

U.S. Department of Energy Comments
to the
Bureau of Land Management
U.S. Department of the Interior
on the
Northeast National Petroleum Reserve - Alaska
Draft Integrated Activity Plan/Environmental Impact Statement

Summary

The Department of Energy (DOE) recommends the maximum level of leasing in the northeast National Petroleum Reserve - Alaska (NPR-A) planning area consistent with responsible development practices and protection of sensitive environmental areas. The availability of current and future advanced technologies and innovative operating practices, and the participation of a multi-stakeholder group as discussed herein, should provide the environmental protection to allow the Bureau of Land Management (BLM) to make nearly all of the NPR-A planning area available for leasing.

NPR-A does contain very special and sensitive environments that must be protected. But lands with significant resource potential do not have to be made off limits to development in order to prevent unacceptable environmental degradation. There is another approach. The industry can provide the needed protection through the use of technology that minimizes surface occupancy and by scheduling activities so as to minimize or avoid conflicts with wildlife when they are most vulnerable.

DOE supports rational, responsible, environmentally protective development of our domestic energy resources as a key factor in ensuring the energy and economic security of our Nation. The United States currently imports nearly 50 percent of its oil supply, and our reliance on imported oil is expected to continue to grow. Disruptions in world oil markets have contributed to several economic slowdowns since the 1970s. We have made significant progress toward reducing our vulnerability to oil supply disruptions by increasing our efficiency in the use of energy, continuing to emphasize emergency preparedness, helping to develop diverse world oil sources and alternative fuels, and increasing our attention to the security of domestic energy systems and related parts of the Nation's critical infrastructure. But we must also seek to stop the decline of domestic oil production and continue to develop domestic natural gas resources. NPR-A, with its vast oil and gas resources, could play an important role in offsetting this decline, while also helping us attain our goal to reduce greenhouse gas emissions by substituting natural gas for other fuels.

Oil and gas resources can be recovered from the NPR-A in an environmentally protective and responsible manner. The domestic oil industry has made and is continuing to make great improvements in Arctic exploration and production operations. Technologies are now available that allow drilling and development to take place with very little surface "footprint," very small risk of damaging spills, and almost complete restoration of sites to their original condition later. Innovative operating practices can greatly reduce the number of personnel on site, nearly eliminate stress on vulnerable wildlife, and minimize impacts on other uses of the Petroleum Reserve.

Development of the NPR-A can take advantage of the existing infrastructure on the North Slope, including the Trans-Alaskan Pipeline System, connections to the nearby Alpine Field -- one of the largest fields discovered in the U.S. in recent decades -- and other oil processing and support facilities. If leasing is significantly delayed, these facilities may be gone, and NPR-A oil and gas could not then be economically produced. In addition, the infrastructure that would be built within the NPR-A, specifically the pipeline system, would be necessary for development of existing offshore leases adjacent to the northwest section of the planning area.

BLM's resource and economic estimates appear to be conservative. The assumptions used to estimate economically recoverable oil significantly underestimate the amount that would be economic to recover. Therefore, DOE recommends using the technically recoverable estimates in making this leasing decision. Furthermore, the natural gas resources should be considered economically recoverable using technology that will become available around the time production from NPR-A would begin. In addition, the analysis of State revenues resulting from oil production seems to be low by an order of magnitude. 001

DOE will work with the Department of the Interior to identify advanced technologies and practices, develop and implement technological goals and standards, and monitor applications to help assure that exploration and development can proceed with acceptable environmental impacts. In addition, DOE recommends that a multi-stakeholder group be formed to oversee application of technology to minimize footprint and other impacts; agree to technological goals, standards, and practices; resolve disputes; and disseminate information on environmentally sensitive and sustainable development. DOE would help to organize and facilitate such a group.

Introduction

The DOE is pleased to provide comments on BLM's Draft Integrated Activity Plan/ Environmental Impact Statement (IAP/EIS) on management of the northeastern portion of the NPR-A. This draft represents an impressive effort which has produced a quality document.

The following comments are provided from DOE's perspective as the lead Federal agency on National Energy Policy, encompassing our missions related to energy security, energy research and development, and global environmental improvement. DOE supports rational, responsible, environmentally protective development of domestic energy resources. Such development has

important national benefits. DOE wishes to work cooperatively with the Department of the Interior in implementing a technology-based approach to the safe and productive development of NPR-A.

Federal Lands are Important to the Nation's Energy Security

Federal lands, both onshore and offshore, are critical sources of our Nation's oil and gas supply. In fact, Federal offshore lands, managed by the Minerals Management Service, currently account for 25 percent of the Nation's domestic natural gas production and 15 percent of the Nation's oil production. Onshore Federal lands, managed by BLM and the Forest Service, provide 10 percent of our natural gas production and 5 percent of our oil production. And this production comes from less than 5 percent of Federal lands. DOE believes that it is important to maintain access to those Federal lands that have a high resource potential where multiple use is acceptable after proper environmental and scientific analysis.

The Nation Needs NPR-A's Oil and Gas Resources

DOE supports rational, responsible, environmentally protective development of our domestic energy resources as a key factor in ensuring the energy and economic security of our Nation. The United States currently imports about 50 percent of its oil supply, and our reliance on imported oil is expected to continue to grow. Disruptions in world oil markets have contributed to several economic slowdowns since the 1970s.

We have made significant progress toward reducing our vulnerability to disruptions in oil supply by increasing the efficiency of our energy use, continuing to emphasize emergency preparedness, helping to develop diverse world oil sources and alternative fuels, and increasing our attention to the security of domestic energy systems and related parts of the Nation's critical infrastructure. But we must also seek to stop the decline of domestic oil production and continue to develop domestic natural gas resources. While critics may say that development of NPR-A would provide only enough additional resources to meet the Nation's needs for a short time, the fact is that our domestic energy supply is composed of numerous individual fields -- some large, but most so small that their production would not sustain the entire economy for days, let alone weeks or months.

The Energy Information Administration projects that domestic oil production will continue its historic decline at an average rate of 1.1 percent per year between 1996 and 2020, from 6.5 million barrels per day in 1996 to 4.9 million barrels per day in 2020, or 24 percent. NPR-A, with its vast oil and gas resources, could play an important role in offsetting this decline. The estimated recoverable oil resources of NPR-A are equivalent to 14 percent of our present domestic oil reserves. The natural gas resources are also significant, and could be economically recoverable in the foreseeable future using new technology. Both represent a substantial contribution to energy security. Increased natural gas supply to meet the increase in demand for

gas in uses such as electric power generation is also a key element in helping to achieve our climate change goal of reduced carbon emissions.

As the draft IAP/EIS shows, NPR-A offers the potential of substantial oil and gas resources. There are an estimated *5 billion barrels of oil equivalent* (considering technically recoverable *oil and gas* resources) in the Petroleum Reserve, perhaps substantially more. As discussed below, DOE believes that the technically recoverable resource estimates, rather than the economically recoverable estimates, should be used in making the decision on whether to lease the northeast portion of the Petroleum Reserve.

The Nation, therefore, cannot afford to maintain NPR-A as a reserve, notwithstanding the current low prices and ready availability of crude oil on the world market. If approval were granted today for the leasing and development of the northeastern NPR-A, production would not begin in the Petroleum Reserve for several years. While projecting a development schedule for North Slope areas is difficult, it may take as long as 10 or more years, including the time needed to conduct a lease sale, to start any substantial production from NPR-A. U.S. demand for oil and natural gas will continue to increase during this period, and the NPR-A would be an important and reliable source of domestic production to help meet this demand.[1]

The IAP/EIS concluded that the natural gas resources in the NPR-A are not economic today because of the difficulties associated with getting this gas to a major market. Specifically, it stated that gas from NPR-A was not economic because: (1) there is no transportation system available to move the gas from the North Slope to markets, and (2) under current conditions, the high costs of either a pipeline or an LNG delivery system cannot be supported by gas prices or 002

[1] In January 1998, DOE issued a draft Comprehensive National Energy Strategy for public comment. Three of the objectives in this strategy are to:

- Reduce the vulnerability of the U.S. economy to disruptions in oil supply, in part by first stopping and then reversing the decline in domestic oil production by 2005.
- Grow domestic energy production in an environmentally responsible manner, using advanced technology to recover more oil from reservoirs without significant environmental degradation, and supporting policies to allow our natural gas supply to grow by up to 6 trillion cubic feet by 2010.
- Accelerate the development and market adoption of environmentally-friendly technologies, including climate-friendly technologies that use natural gas in ways that generate economic benefits while reducing greenhouse gas emissions.

The maximum level of leasing in the NPR-A as recommended by DOE in these comments is consistent with each of these goals.

market demand. The document also states that, if a future pipeline or LNG system was built to provide access to markets for the estimated 23 to 35 Tcf of proved reserves on the North Slope, an economic analysis of the NPR-A gas resources should be made at that time. 002

DOE believes that the benefits of the natural gas resources of NPR-A should be considered now. During the 10 or more years between now and the commercial development of NPR-A, substantial shifts in gas markets and major improvements in technologies for gas recovery and delivery are anticipated. These changes will undoubtedly prompt reevaluation of projects for both pipeline and LNG delivery of natural gas to markets. Another developing delivery mode for remote sources of natural gas that will be available within this time period is the conversion of natural gas to middle distillates, termed gas-to-liquids (GTL) technology. This technology is near commercialization in other areas of the world, at sites where major "stranded" gas reserves and marine transportation of the distillate product are both readily available.

There are several advantages in converting gas to distillates at its source, compared to gas liquefaction. For conversion of North Slope gas, the product can be transported through the existing oil pipeline, TAPS. Marine transportation of distillates is substantially less costly than the cryogenic infrastructure required for LNG processing and delivery, and sources and markets for distillates need not be tied together with long-term contracts as with LNG projects. Also, distillates, whether heating oils or diesel fuel, are genuine international commodities.

The disadvantage for GTL now is that the technology has not yet matured to the level where it is economically viable in many parts of the world. However, ongoing research is expected to bring GTL costs down to a level competitive with LNG within the next decade. DOE is co-sponsoring research with several industrial concerns to develop a ceramic membrane that will reduce the cost of the air separation step required in the GTL process. If successful, this new technology is expected to reduce the cost of GTL technology by 25 percent, making it more competitive with distillates from crude oil and less costly than LNG.

This DOE/industry research is expected to make NPR-A gas resources technically and economically viable to supply high quality liquid fuels. A pilot project for gas-to-liquids technology could be initiated as early as 2003, making the technology commercially available by 2010. That coincides with expectations to begin oil production from the northeastern NPR-A by 2008. So let us not discount or dismiss the important energy, environmental, or economic benefits that could result from the NPR-A gas resource base.

Strive for a Balanced Multiple-Use Policy

Federal lands should be managed to achieve a balance among multiple uses, including environmental protection, subsistence activities, recreation, minerals recovery and other economic purposes. DOE supports rational, reasonable, environmentally protective energy development and believes that responsible development of NPR-A for energy extraction can be accomplished in a way that meets our energy policy goals while achieving good land

management results. In addition, because the natural gas resources of NPR-A may well be economic to recover, this development could make a significant contribution to achieving the Nation's climate change goals and commitments. The Administration should strive for consistency in all three of these policy areas: land management, energy, and environment. This can be achieved through balanced decisions that do not discount any one area.

NPR-A does contain very special and sensitive environments that must be protected. But lands with significant resource potential do not have to be made off limits to development in order to prevent unacceptable environmental degradation. There is another approach. The industry can provide the needed protection through the use of technology that minimizes surface occupancy and schedules activities so as to minimize or avoid conflicts with wildlife when they are most vulnerable.

Protect the Arctic Environment Using Technology

The DOE is committed to ensuring an appropriate level of environmental protection as industry explores and produces America's vital energy resources. DOE sponsors considerable research focused on technologies and practices to reduce and mitigate the environmental impacts of oil and gas exploration and production.

Some have expressed concern that leasing in the NPR-A will result in unacceptable damage to the environment and, therefore, it should be made unavailable for leasing. However, because of regulatory requirements and advanced technologies and operating practices, the amount of land that will be affected by potential drilling and development will be very small.

As the IAP/EIS acknowledges, the petroleum industry has achieved great technological advancements in its operations over the past several decades in the Arctic North Slope environment. The surface footprint of oil operations has decreased impressively since the Prudhoe Bay field was begun. Some of the recent advances, discussed in more detail below, include:

- Drill pad size has decreased more than 80 percent, from 65 acres with older pad designs to less than 10 acres, and the required number of pads is greatly reduced with the use of horizontal drilling. Drilling can take place in winter on ice pads that leave no mark on the sensitive tundra after operations are completed.
- Roadless development is possible because of improvements in ice-road and drilling pad construction, eliminating long-term impacts to the tundra.
- Used drilling fluids and rock cuttings are disposed of by injecting them through wells into underground formations. There is no surface discharge of drilling fluids or dumping of drilling wastes, eliminating mud-reserve pits.

- Reservoir targets miles away from the surface well head can be tapped by extended reach wells. Therefore, fewer drilling pads are needed to produce subsurface resources.
- Multiple completions can be made from a single wellbore to increase well productivity and reduce the number of surface wellheads. Fewer wellheads allows a reduction in pad-footprint area.
- Advanced seismic data acquisition and interpretation results in better drilling efficiencies and fewer holes.
- Production sites can be operated remotely through a combination of such technologies as fiber optics, remote sensing, and robotics, minimizing the need for personnel to visit the site and thereby eliminating stresses on caribou, geese, and other wildlife during vulnerable periods.
- New construction designs, improved materials, new technology, and better operating practices and plans have greatly improved spill prevention, detection, and response, keeping the risk of environmental damage from spills to a negligible level.
- Insulated pipelines can be laid inches above the surface without damaging permafrost and run under rivers through horizontally drilled tunnels.

The Alpine Project is a good example of technology and operating improvements in North Slope development. The total surface footprint to develop 365 million barrels of oil will be only about 114 acres, which is less than 1 percent of the subsurface drainage area. It will require the use of two production well pads to support 100-150 wellheads, a pipeline gathering system to a central processing facility, a 3-mile road, a crew support camp, and an airstrip. All of this development will take place in an area that is full of small ponds and lakes. There will be no gravel road connecting the project to other North Slope fields, but a winter ice road to haul large equipment. Compared with early Prudhoe Bay development, Alpine's surface impact is greatly reduced.

With advances in directional drilling technologies and new rig designs, the number of wellheads on a single production pad has been greatly increased, while the surface spacing between wellheads has been significantly reduced, from 120 to 160 feet 20 years ago to 10 to 20 feet today. At Prudhoe Bay, the well pads occupy 65 acres each; modern pads only need 9 to 11 acres. Because of the smaller area needed to develop fields, there is less of an impact on the environment. This includes a reduced need for gravel. In fact, gravel requirements can be reduced even more with the use of composite pad designs, in which the lower part of the pad is built using blended mixtures of sand and silt. This is then overlain with a foam insulation board and then gravel. This technique will reduce the amount of gravel needed and improve reclamation efforts after the pad is removed.

It may be possible to eliminate the use of gravel, sand, and silt altogether in sensitive or special areas by locating wells on pilings in small lakes that are little used by wildlife. While this may seem a radical idea, it can have many environmental advantages, including essentially zero surface footprint, low visual profile, and elimination of stresses on caribou, geese and other wildlife. Advanced spill prevention and detection technologies and prestaging and predeployment of spill response equipment can assure that the lake is not damaged by a spill. When operations are completed, there is no trace of human intrusion left.

New technologies and practices have also impacted the disposal of drilling mud and cuttings. This has eliminated the need for reserve pits. Today, industry reconditions and reuses up to 80 percent of its drilling mud, which saves costs of both materials and disposal. Clean sand and gravel processed from well cuttings can be recycled and used for construction.

Road construction methods also have improved. The construction of ice roads and drilling pads previously used a great deal of water. New construction methods use aggregate "chips" shaved from frozen lakes, which decreases the amount of water needed and the time to build the roads. Under the old method, a road would be built at a rate of only 1-1/2 inches per day. Using aggregate chips, this rate increases to 4-1/2 inches per day. The same process is used in the construction of ice bridges and drilling pads. New designs for ice pad construction have allowed pads to remain in place over the summer months and be reused in the winter, thus reducing the need for personnel and equipment to reconstruct pads where drilling takes place over multiple years.

Advances have also been made in pipeline construction. The pipeline for the Alpine field will have to cross the Colville River. To cross the 4,000-feet-wide river, the companies will use a horizontal directionally drilled (HDD) tunnel that will be 100 feet below the river bed and will not disturb the river's ecology. It is expected that any crossings of large rivers in the NPR-A also will use HDD technology. The IAP/EIS correctly assumes that new pipelines will not need to have corresponding gravel roads, which will also reduce the impact on the environment.

Other advancements in pipeline technology include:

- Flexible, insulated pipe, currently under development, that can be laid inches above the tundra without damaging the surface, or put in lake beds to minimize land crossings, and then be rolled up and taken away when production is finished.
- Vertical expansion loops that greatly reduce the need for valves, where most leaks occur.
- Techniques for burying pipelines in permafrost without thawing the surrounding soils.
- Raising pipelines high overhead in areas where surface deployment would be a barrier to animal migration or other wildlife activities.

As impressive as today's cutting-edge technology is, this is clearly not the limit of what can be done. Considering the advances in Arctic operations and technology that have been made by the industry during the past 20 years, we are confident that impressive improvements will continue to be made. If approval were granted today for the leasing and development of the northeastern NPR-A, production would not begin in the Petroleum Reserve for as long as 10 or more years. We can expect the technology that is actually used at that time to be better still. The certainty of continuing improvements should be taken into account in making this leasing decision.

In summary, through improvements in technology, industry has and will continue to improve its operations to properly protect the environment. As a result, instead of wholesale deletions from leasing, the required use of technology and mitigating measures can be established for special management areas in order to safeguard the environment. Taking advantage of advances like those described above, BLM can protect sensitive environmental areas while still allowing the leasing of mineral rights.

Take Advantage of Synergies

Development of the NPR-A can take advantage of the existing infrastructure on the North Slope, including the Trans-Alaska Pipeline System (TAPS), connections to the nearby Alpine Field, and other oil processing and support facilities. Once these facilities are gone, NPR-A oil and gas could not be economically produced. In addition, the infrastructure that would be built in NPR-A, specifically the pipeline system, would be necessary for development of existing offshore leases adjacent to the northwest section of the planning area.

Since it is very expensive to explore, develop, and produce oil on the North Slope, large discoveries, of 500 million barrels or more, have been required to justify the investment costs and risks. But because of the development of existing fields, and with much required transportation and processing infrastructure already in place, fields of 100 to 200 million barrels are planned for new development and satellite fields with 30 to 50 million barrels can be economic to develop. Fields of this size would not have been economic a decade ago.

The Alpine Field, which is slated to begin producing in 2000, is the largest discovery in Alaska since 1988, and one of the largest fields discovered in the U.S. in recent decades. It is located just on the eastern edge of NPR-A. In order to develop the field, a 34.2 mile pipeline will be constructed to the Kuparuk oil field processing center, which will transfer the oil to Pump Station No. 1 at the TAPS. With the added pipeline capacity in place, together with processing and support facilities, the cost to develop fields located in the NPR-A will be reduced, making them more economic to develop.

In addition to the added infrastructure in place due to the Alpine field development, the field is of particular significance because it has revealed a new geologic play in previously unknown sands in the Jurassic section. This new play may extend into the NPR-A.

Although few Arctic offshore fields have been developed to date, because of the unfavorable economics, there are substantial known petroleum reserves located offshore in both State and Federal waters of the Beaufort Sea. A number of prospects have already been unitized for possible development, while development permits are being obtained for the Northstar and Liberty projects. A number of wells have already been drilled in the offshore just north of the NPR-A planning area. Currently, there are six Federal offshore leases and several State leases off the northwest section of the NPR-A Planning Area. If sufficient quantities of oil were found on these leases, the economics to develop them would certainly be improved if there were existing onshore infrastructure to support NPR-A development.

For these reasons, the Nation must take advantage of the opportunity to make use of the existing and developing infrastructure on the North Slope. It is only by using the facilities the industry has built there -- pipelines, processing and support facilities -- that NPR-A development can be economic. Once this infrastructure is gone, the "reserve" will have no value for energy or economic security because the oil and gas will not be economic to produce.

BLM's Resource Estimates Appear Conservative

Although drilling previously occurred in the NPR-A, the area has been unavailable for exploration drilling for many years. Currently, only seismic surveying is allowed. Under these conditions, the evaluation of undiscovered resources is difficult and subjective, as described in the draft IAP/EIS. BLM has made a credible effort to estimate the resources which could potentially exist in the NPR-A, based on the limited geologic information available. It is important to note, however, that the methodology used by BLM, by design, leads to a conservative estimate of the economically recoverable oil and gas resources. The IAP/EIS acknowledges this conservatism, which results from three fundamental features of the methodology used. The features are discussed below.

Economic Resource Estimates Assume No Future Technological Advances 003

The IAP/EIS acknowledges the tremendous level of technological advance that has occurred in the North Slope in the last decade. These advances have extended significantly the productive life and recovery potential of producing fields, and have allowed previously uneconomic, smaller fields to be developed. The characteristics of these advances were discussed above. However, despite these gains over the last 20 years, the methodology used to assess economic resources in the NPR-A assumes no future technological advances. Even a modest improvement in technology in the future could result in considerably larger estimates of economic resources in the NPR-A.

Economic Resource Estimates Do Not Account for the Synergistic Effects of North Slope Developments 004

Another feature of the methodology used to estimate economically recoverable resources in the NPR-A is that every prospect considered must be economically justifiable on its own; the economic evaluation of the recoverable reserves does not account for prospects considered in conjunction with each other. For example, it does not account for the very likely possibility that some reservoirs will be stacked, allowing multiple completions from single wells and/or shared use of gathering, processing and transportation infrastructure.

The evaluation assumes that each and every prospect ("prospect" is equivalent to "pool" or "reservoir") that will be developed in the area has to bear the full cost associated with exploration, development, and production, along with surface facilities associated with the production and product transportation infrastructure. This will most assuredly not be the case given (1) the geographically concentrated location of the most promising plays at the northern third of the coastal plain in association with the Barrow Arch, and (2) the presence of the Alpine Field immediately to the east of that area. To bear the full development and transportation costs, each of the projects has to be much larger to be considered economic, compared to the case where some of the transportation and production facilities are shared by several prospects. Sharing facilities lowers the capital and operating costs and makes smaller prospects suitable for economic development. Therefore, the methodology used by BLM results in a dramatic reduction in the number of prospects and total potential resources determined to be economic in the NPR-A.

Economic Resource Estimates Do Not Account for the Future Potential for Natural Gas 005

As discussed in some detail above, not considering the future economic potential of natural gas resources in NPR-A also contributes to a very conservative estimate of the hydrocarbon resource potential on the NPR-A.

In summary, these three features of the methodology employed to estimate economic resources in the NPR-A result in a very conservative assessment of the NPR-A resource potential. As an alternative, DOE recommends that it would be more appropriate to use the estimate of *technically* recoverable resources, rather than the *economically* recoverable resources, for purposes of characterizing the economic benefits of leasing in the NPR-A.

Taking this perspective increases the potential mean or expected resource of the NPR-A planning area from a range of 0.5 to 2.2 billion barrels (depending on oil price) to approximately *5 billion barrels of oil equivalent* (considering technically recoverable *oil and gas* resources). Given the fact that these estimates are highly uncertain, there is a chance that considerably higher volumes of potential resources exist within the NPR-A planning area. If NPR-A's resources prove to be substantially higher than BLM estimates, that does not mean a proportionate increase in drilling

and environmental impacts. Given the state of technology, additional resources could be developed with little additional disturbance. 005

BLM's Economic Benefits Estimates Appear Conservative 006

DOE believes that the BLM's estimates of economic benefits to the State and Federal Government from the leasing and development of the northeastern portion of NPR-A may be overly conservative, or in error. First, to the extent that the number of economic prospects is underestimated, the volume of recoverable oil resource is also underestimated. This underestimate could result in reduced estimates of revenues associated with lease bids, royalties, and severance and other tax revenues to the State and to the Federal Government. This conservatism also leads to State economic activity, employment, sales taxes, and related revenues being underestimated. Federal tax revenues from employment and corporate earnings would similarly be underestimated.

Additionally, it appears that some of the estimates of revenues to Federal, State, and local Government presented in the IAP/EIS are understated, even given the economic resource estimates presented in the IAP/EIS. For example, referring just to the presentation for Alternative E (p. IV-F-19), the text states that State royalty income "would be in proportion to production, or approximately $0.25 million for each 1 MMBbls of oil produced..., or $2.5 to $10 million annually." First, royalty income will be proportioned to *both* production and the price of oil at the wellhead (less the costs of transportation in TAPS and by tanker to market). Second, at a royalty rate of 16.67%, a $18/Bbl price of oil, $2.80/Bbl TAPS tariff, and a $1.53/Bbl tanker charge (resulting in a wellhead price of $13.67), State royalty revenues, at 50 percent of total royalties, would be on the order of $1.1 million for every 1 MMBbls of oil produced or approximately *$20 to $170 million* per year for the multiple sale scenario, depending on the resource endowment and price of oil. Similarly, our estimate of State severance tax revenues is on the order of *$20 to $130 million per year*, not $1.25 to 5 million annually reported in the IAP/EIS. 007

Thus, production from NPR-A would result in a total average direct revenue benefit to the State of between *$40 million and $320 million per year for 25 years*. Total State revenues over the life of the NPR-A projects would range from *over $1 billion to almost $9 billion*. This is more than an order of magnitude greater than the estimate in the draft IAP/EIS.

The Department of Energy Will Work With BLM

DOE will work with the Department of the Interior to identify advanced technologies and practices, develop and implement technological goals and standards, and monitor applications in order to help assure that exploration and development can proceed with acceptable environmental impacts. Our technical staff and research laboratories can provide expertise, risk analyses, and other support to achieve responsible development.

In addition, DOE recommends that a multi-stakeholder group be formed to advise the Secretary of the Interior on application of technology to minimize footprint and other impacts; agree to technological goals, standards, and practices; resolve disputes; and disseminate information on environmentally sensitive and sustainable development. Members of this group would include Federal and State agencies, local government, industry, and environmental and citizens organizations that would like to cooperate in applying technological solutions to environmental issues. The group would also serve to educate the public about these solutions. The group's scope need not be limited to NPR-A, but could address North Slope operations as a whole. DOE would help to organize and facilitate such a group. 008

One effort of this multi-stakeholder group could be the development of standard practices on the North Slope that would minimize the footprint of oil and gas activities. Such standard practices would reduce uncertainty on the part of operators and would assure that the best available practices are used. Such standards could be implemented through regulation, stipulation, or published industry recommended practice.

Conclusions and Recommendations

The Department of Energy recommends the maximum level of leasing in the NPR-A planning area consistent with responsible development practices and protection of sensitive environmental areas. It is the Department's contention that full consideration of the innovative use of advanced technology should result in making nearly all of the planning area available for lease. Individual lessees could then be required to make use of these technologies and innovative operating practices to protect and avoid disturbance of sensitive environmental areas and wildlife at the surface while accessing the valuable resources that lay far below. The consequences of not making this Petroleum Reserve available for lease include greater dependence on oil imports, increased trade deficit, fewer domestic jobs, and foregone development of other Alaska resources.

DOE will work with BLM on identifying technologies and practices that can meet the demanding environmental requirements of the North Slope, developing standards for technology applications and protective practices, educating the public on technology benefits, and forming and facilitating a multi-stakeholder group that will serve to include all interested parties in these activities.

DOE believes that leasing to develop oil and natural gas resources in the northeastern NPR-A is a wise and prudent public policy decision. It will help ensure U.S. energy and economic security, ultimately contribute to efforts to reduce greenhouse gas emissions, yield important economic benefits to Alaska and the Nation, and sustain and facilitate other important energy and infrastructure development. While delivering these benefits, development in NPR-A poses little environmental risk if properly done. With careful development and a diligent restoration plan, sensitive environments can be protected while vital energy resources are produced.

1657-001
Resource estimates in the IAP/DEIS were generated using established methodology and computer models. The BLM collaborated with MMS geoscientists and BLM held peer reviews of this assessment with State of Alaska geologists who generally approved the methodology and results.

It is common knowledge among researchers in the field of resource assessment that there is no "right answer" or "wrong answer when estimating undiscovered petroleum resources in a partially explored frontier province. The true volume of economically recoverable resources will remain uncertain until production activities, and that could be decades from now.

The standard practice is to use economically recoverable resource estimates for planning and environmental analyses. Recoverable resource estimates represent a reasonable portrayal of potential activities under foreseeable conditions. Technically recoverable resource estimates are unrealistic because almost all of the resources occur in pools that are not commercially viable. The BLM acknowledges that improvements in technology associated with exploration and production are likely to increase the volume of resources discovered and extracted. However, a variety of outside factors could restrict leasing, exploration interest, or development, and result in a prospective area being abandoned before its full potential is realized.

The resource estimates reported are used primarily to scale future petroleum-related activities for environmental impact analysis. Accordingly, speculation of future technology (unknown at this time) or assumptions regarding future infrastructure which is uneconomic under current conditions (gas production in arctic Alaska), is beyond the working definition of "reasonable and foreseeable" employed in this document.

1657-002
The BLM is aware of the research the Department of Energy is conducting on gas-to-liquids (GTL) technology and acknowledges that gas processing and transportation using GTL technology could someday provide a viable alternative to proven liquefied natural gas (LNG) systems. The fundamental question is when? When will a gas transportation system (GTL or LNG) be constructed for the North Slope? When will this system have excess capacity to handle new gas resources beyond the 23 to 35 trillion cubic feet of proven reserves on the North Slope? When will significant new gas discoveries be made in the NPR-A? These unanswerable questions place the issue of future gas production from the NPR-A beyond the scope of a "reasonable and foreseeable" scenario.

1657-003
The BLM is aware of the technological advances in petroleum engineering. Many of the advances were pioneered by ongoing operations on the North Slope; therefore, the BLM has reason to expect that such innovations will continue. The problem is how to accurately quantify future innovations when constructing computational models—particularly for technology that has not been imagined yet. For example, if BLM evaluates drilling costs and completion schedules according to recent data available from the North Slope, what are the costs and completion schedules for wells drilled by laser technology, or is future technology feasible in this geologic setting?

To generate defensible assessments, BLM is compelled to assume state-of-the-art technology and cost data from actual operations. Resource assessments are periodically updated to incorporate new geologic and engineering information, and computer models are often upgraded. Using updated information and models, BLM believes its resource assessment is realistic and supportable with regard to petroleum development in the foreseeable future.

1657-004
It is accurate that each viable prospect must individually support basic construction and production equipment costs (pads, wells, sales oil pipelines, and support facilities). However, the computer simulation model is set up so that major infrastructure components (gathering pipeline systems, staging areas, and regional transportation systems) are shared by all viable fields. Prospects are developed (by modeling simulation) in conjunction with other nearby prospects in all geologic plays. Capital costs for new regional infrastructure are shared by all viable fields. The costs of using existing infrastructure (pipelines, processing facilities) is entered as tariffs (from published data).

Stacked reservoirs are difficult to evaluate without knowledge of pool locations. Pools in each play are sampled (discovered), have simulated development/production, and are aggregated into economic resource estimates. In some circumstances, stacked plays share development costs and produce higher resource estimates for that particular trial.

Typically, 1,000 simulation trials are run in the modeling. Outputs from the trials are statistically reported as cumulative probabilities. A different computer simulation model is used to track and evaluate work following a lease sale. In this Montcar model, the location of subsurface reservoirs are defined in relation to surface tract boundaries. Several stacked reservoirs are combined into development simulation models.

Depending on the timing and location of future discoveries, synergistic effects with existing oil fields are likely to lower the economic threshold for new fields. However, without knowledge of timing and location, the BLM believes it is speculative to include possible production from subcommercial fields. Under certain circumstances, the fields could become viable satellites.

1657-005
Please see Responses 1657-001 and 1657-003 regarding resource estimates (technically vs economically recoverable). Please see Responses 1334-010 and 1657-002 regarding potential natural gas production.

1657-006
Please see Responses 1334-010, 1657-001, 1657-002, and 1657-003 regarding questions on resource estimates and methodology.

1657-007
The text has been modified to show increased royalty to the Federal, State, and local government and severance tax to the State. A royalty rate of 16.67 percent is assumed based on the last lease sale in the NPR-A. Charges of $1.69/bbl for marine transportation, $2.71/bbl for TAPS tariff, and $0.14/bb for feeder pipeline, according to information from the State of Alaska, are used. The State severance tax of 12.5 percent for the first 5 years and 15 percent for the following years are used based on information from the State of Alaska. The modified text can be found in the sections analyzing economic impacts: IV.C.11, IV.D.11, IV.E.11, IV.F.11, IV.G.11, and IV.H.11.

1657-008
A research and monitoring group has been incorporated into the Preferred Alternative (see Sec. II.F.7). It is through this group that new technological advancements can be evaluated and recommended as standard practices. As additional knowledge is acquired about the resources and their response to development, and as advancements in technology occur, standard practices will evolve. All parties interested in cooperating in this process will be invited to participate.

BP EXPLORATION

1658

Richard C. Campbell, MBE
President, Alaska

BP Exploration (Alaska) Inc.
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(907) 564-5422

March 12, 1998

RECEIVED

NPR-A Planning Team
Department of the Interior
Bureau of Land Management
Alaska State Office (930)
222 West 7th Avenue
Anchorage, Alaska 99513-7599

Re: Northeast National Petroleum Reserve-Alaska Draft Integrated Activity Plan/Environmental Impact Statement

Ladies and Gentlemen:

BP Exploration (Alaska) Inc. (BPXA) appreciates this opportunity to submit the attached comments in response to the Northeast National Petroleum Reserve-Alaska Draft Integrated Activity Plan/Environmental Impact Statement (DEIS). These written comments supplement the oral testimony provided by BPXA during the public hearings on the DEIS held in Anchorage on January 21, 1998, and in Washington, DC on January 26, 1998.

BPXA supports responsible development of NPR-A and specifically Alternative B in the DEIS. This, we believe, is the alternative that will provide the greatest industry interest. This alternative, which provides for full leasing of the planning area, is the alternative which we believe fully complies with the Congressional intent, both in establishing the NPR-A as a petroleum reserve and specifically authorizing petroleum production. Enhanced domestic production of oil and gas is directly dependent upon sufficient exploration acreage being offered in a timely manner. Therefore, we commend the Department of the Interior for initiating this process by which the Northeast NPR-A can be made available for oil and gas leasing.

Attached are our detailed comments dealing with the proposed stipulations, the scientific database of the DEIS, evolving oil industry technology, design and environmental impact mitigation and protection of subsistence resources. These comments are intended to help ensure that the final decision is based upon best

management practices and scientific information available. BPXA is proud of its environmental and safety record. We emphasize a continuing commitment to a high level of environmental performance and applied science in the design and operation of all our projects on the North Slope.

BPXA appreciates this opportunity to comment on the DEIS and looks forward to reviewing the Final EIS. If you have any questions concerning our comments, please contact Mr. Pete Zieleczky, Land Manager-Alaska, at (907) 564-5083.

Sincerely,

Richard C. Campbell

Attachment

cc: Tom Allen, State Director, BLM/Alaska
Judy Brady, AOGA
Senator Frank Murkowski
Commissioner John Shively, ADNR
Senator Ted Stevens
Deborah Williams, Special Assistant to the Secretary, DOI
Congressman Don Young

BP EXPLORATION (ALASKA) INC.
COMMENTS ON THE
NORTHEAST NATIONAL PETROLEUM RESERVE-ALASKA
DRAFT INTEGRATED ACTIVITY PLAN / ENVIRONMENTAL IMPACT STATEMENT

SUMMARY OF COMMENTS

Support of Alternative E

BP Exploration (Alaska) Inc. (BPXA) supports Alternative E in the Draft Environmental Impact Statement (DEIS). This is the only alternative which provides adequate prospective acreage for exploration that may generate sufficient bids and industry interest. Further, this alternative, which provides full leasing of the planning area, is the only alternative that fully complies with the Congressional intent in establishing the area in 1923 as a petroleum reserve. Due to its oil and gas potential, Congress in December, 1980, enacted legislation specifically authorizing petroleum production in the NPR-A (PL 96-514). Given this legislative history, BPXA believes the entire NPR-A should be made available for leasing in a phased and appropriate schedule. However, because the planning area includes only the northeast portion of the reserve, we support Alternative E. Within this area, as acknowledged in the DEIS, lies the most prospective acreage designated to have high oil potential; it is essential that this acreage be offered for leasing.

Stipulations

The DEIS proposed 82 stipulations intended to avoid or minimize adverse environmental and socio-economic impacts. While a number of these measures reflect current industry practice and/or existing regulatory provisions, BPXA questions the philosophy of proposing so many general stipulations. BPXA believes that oil and gas activities are best regulated through site specific and project specific mitigation measures developed through evaluation of industry plans of operation.

There is also a presumption in a number of the proposed stipulations that extensive areal and/or seasonal prohibitions on oil and gas activities are the only viable mechanisms for environmental protection. For example, the overlap of setbacks (buffer zones) and exclusion areas in the northeast quadrant of the planning area appears to virtually preclude surface activities over most of the area for part or the whole of a year. Notwithstanding the important environmental resource values of the area, such extensive management tools are clearly not supported by the record of oil and gas activities elsewhere on the North Slope and the scientific data base developed over the

past 25 years. Our detailed comments address the practicality of the stipulations in light of the scientific data.

BPXA recommends that the extensive list of stipulations be re-evaluated such that only those that are scientifically defensible and practical to implement are adopted.

Scientific Data Base of DEIS

The authors of the DEIS are to be commended. Preparation of the DEIS clearly involved assembling and analyzing a large scientific data base on the environment and other resources of the North Slope and the effects of oil and gas development. However, the DEIS can be considerably improved and modified through consideration of additional literature resources, particularly those relating to caribou and fish. BPXA has provided in our detailed comments (below) key additional literature citations that in our opinion need to be reviewed. Many of these citations relate to the impacts of oil and gas leasing in NPR-A. Further, much of this literature is in peer-reviewed journals or represents the work of joint industry and agency studies. The DEIS can be further improved, as our detailed comments note, by providing closer correlation between impact conclusions and literature cited in the bibliography.

Oil Industry Technology, Design and Environmental Impact Mitigation 001

The authors of the DEIS have done a reasonable job of reviewing Section IV.A, Oil Industry Exploration and Development Technology on the North Slope. However, as a basis for impact assessment, this evaluation could be expanded in such areas as project siting and land use (e.g., wetland values), pre-construction studies, waste management (not just muds and cuttings disposal), and air and water quality protection.

Subsistence

BPXA recognizes that protection of subsistence resources and lifestyles are critical goals in developing a leasing program and mitigation measures for NPR-A. As such, BLM should ensure that mechanisms are in place that insure local involvement among subsistence users and oil companies and that impose the minimum of bureaucracy.

BPXA provides below a detailed summary of comments organized to correspond to the chapters/sections contained in the DEIS.

I. INTRODUCTION

BPXA strongly supports the recognition in the DEIS that the NPR-A has historically been designated by both the President and the Congress as a petroleum reserve. In 1923 President Warren G. Harding signed an executive order establishing this area as the Naval Petroleum Reserve No. 4. This same area was later designated the National Petroleum Reserve -Alaska to be managed by the Department of the Interior. The Naval Petroleum Reserves Production Act of 1976 (NPRPA) provided the Secretary of the Interior with the authority to conduct oil and gas leasing and development in the NPR-A, subject to "such conditions, restrictions and prohibitions as the Secretary deems necessary or appropriate to mitigate reasonably foreseeable and significantly adverse effects on the surface resources of the NPR-A."

The NPR-A has a long history of oil and gas exploration and has been the subject of several prior lease sales. Fifteen wells have been drilled in the planning area and a considerable amount of geologic investigation, including seismic research, has already been conducted. Much of the information resulting from this work is referenced or included in the DEIS. As discussed in the DEIS, this information indicates that there is a strong potential for commercial discoveries in the Northeast NPR-A, particularly given the recent extension of the pipeline and related infrastructure to the Alpine Field in the adjacent Colville River delta.

Congress also provided that the development of the NPR-A should occur in a manner consistent with the total energy needs of the nation. Certainly there is no dispute that the nation's dependence upon foreign energy sources has continued to accelerate. The DEIS recognizes that the North Slope of Alaska, including the NPR-A, is important to the future of this nation's domestic oil supply. This area currently contributes about 20 percent of domestic oil production. However, this production is currently in decline. As recognized in the DEIS, the ability to explore and develop additional resources in the NPR-A could help stem this decline.

II. ALTERNATIVES

The only alternative that realistically addresses the primary focus of the DEIS to analyze the potential use of the planning area for oil and gas leasing is Alternative E. Alternative E allows the opportunity for oil and gas leasing in the entire planning area, but leaves the timing and extent of individual lease sales to the BLM. Furthermore, Alternative E includes numerous stipulations intended to address environmental and subsistence concerns.

It is well established that North Slope oil and gas activities have evolved considerably since the advent of the Prudhoe Bay oilfield. The DEIS recognizes the major recent advances in oil industry technology on the North Slope, including many environmental mitigation and protection measures. Best management practices such as new drilling technology, vastly reduced surface footprints and advances in waste management have considerably reduced the potential for environmental impacts. For these reasons it is appropriate to make the entire planning area available for leasing. However, should the BLM consider it necessary, for whatever reason, to reduce the acreage available for leasing, under no circumstances should the area designated with high oil potential in Figure II.A.1.a(3)-11 be deleted. This area is essential to ensure that there will be a viable future oil and gas sale. We firmly believe that this area can be leased with little to no adverse impact to the environment or the subsistence uses in the area.

BPXA does not object to the establishment of the special areas proposed in Alternative E, provided that these areas will continue to be offered for leasing, subject to identified stipulations. Also please note our comments below on several of the proposed stipulations. Given our experience in field operation on the slope, these comments are intended to help make the stipulations more practicable and predictable.

Stipulations

- The directive verbs in sentences within several proposed stipulations commingle the mandatory "shall" or "must" with the more permissive "will" and the most permissive "may or should" (i.e. Stipulations #7 and #13). It is recommended that each stipulation be carefully reviewed to ensure that the directive verbs in each stipulation are internally consistent. 002

- Some stipulations require specific actions of the lessee that would ordinarily occur only after the Administrative Officer (AO) has made a specific determination. These stipulations should be amended to first require the actions expected of the AO in order to avoid placing an undue burden upon the lessee. An example is found in Stipulation #36 whereby the lessee "should place the pipeline on the appropriate side of the road." In order to avoid later conflicts, including possible pipeline relocations, the AO should first be required to concur with the lessee's decision concerning appropriate pipeline and road placement. Similarly, it should be specified that it is the AO who determines the date when seismic ground work may begin under Stipulation #20.j., not the lessee. All stipulations should be reexamined to ensure that the actions appropriate for the AO as lessor are specified prior to requiring implementing actions by the lessee. 003

- The provision in the DEIS which allows the AO to modify or waive stipulation provisions in certain instances is essential. However, the list of the specific instances which provide for consideration of such waivers should include the following (Page II-27): 004

  g. if the proponent of an activity demonstrates to the satisfaction of the AO that a modification or waiver of a restriction is necessary in order to apply Best Management Practices (BMP's) to the situation.

  This addition will enable a lessee to deal more effectively with a situation, rather than forcing blind adherence to a less desirable management practice.

- In Section II, Alternatives, the stipulations offered generally are appropriate for protection of fish resources, although the large set-asides (buffer strips) around lakes and streams seem excessive to protect fish. Experience in the Prudhoe Bay region indicates that no adverse effects on fish have resulted from the existing onshore infrastructure, including effects of pads and roads close to lakes and streams. Stipulation 27 dealing with causeways is unclear. It prohibits causeway and dock development in river mouths or deltas. Experience in the Prudhoe Bay region indicates that the effects on fish from causeway development in the delta of the Sagavanirktok River have been benign. Fish freely move through the breaches in the Endicott Causeway, and around its seaward face; no fish blockage occurs. Water exchange occurs through the breaches, and freshwater flow circulates past both sides of the structure from the Sagavanirktok Delta distributaries. Studies sponsored by industry since 1985 indicate that the Endicott Causeway has not affected fish populations. The results of over a decade of monitoring causeways indicates that the locations of coastal development structures should be judged individually, based on such considerations as fish species present, geographic location of the structure, size, and other information. 005

Specific Comments on Stipulations

Solid and Liquid Waste Handling, Hazardous-Material Disposal and Cleanup

Stipulations 1 through 6 - No comment.

7. For oil and gas related activities, a Hazardous-Materials Emergency-Contingency Plan must be prepared and implemented prior to transportation, storage, or use of fuel. Staff shall be instructed in the procedures to follow. The plan should include a set of procedures to ensure prompt response, notification, and cleanup should hazardous substances be spilled or if there is a threat of a release. This plan should include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of Federal, State, and NSB contacts. 006

Comment: The way the first sentence of this stipulation reads, it can be interpreted to mean that no use of any motorized craft which runs on fuel (e.g., rolligons, snowmachines, aircraft, etc.) is allowed until a contingency plan is prepared. BPXA operates under Best Management Practices (BMPs) for fuel handling. We suggest that the first sentence be revised to apply only to transportation and storage of fuel or to otherwise clarify that BMPs will be used for fuel handling related to transportation vehicles.

8. No comment.

9. Fuel, other petroleum products, and/or other liquid chemicals designated by the AO, whether in excess of 660 gallons in a single tank or in excess of 1,320 gallons in multiple containers, shall be stored within an impermeable lined and diked area capable of containing 110 percent of the stored volume. The storage area shall be located at least 500 feet from any river, lake, or stream with the exception of small caches for motor boats and float planes. Material used as a liner must be capable of remaining impermeable during typical weather extremes expected throughout the storage period. 007

Comment: This stipulation does not allow for mobile fuel storage. Typically seismic operations tow 4,000 to 5,000 gallon tanks on a sled-mounted skid. At times the tanks may be in the same location for a few days. It is impractical to store these towed tanks in an impermeable lined and diked area. This stipulation should either exclude seismic operations or clarify what type of secondary containment is required for seismic operations.

Stipulations 10 and 11 - No comment.

12. No refueling of equipment shall occur within 500 feet of the water's edge of any lake or stream, with the exception of refueling of motor boats, snowmachines, and float planes. 008

Comment: Due to the numerous water bodies in the NPR-A, a 500 foot setback for refueling is excessive. The industry standard buffer of 100 feet should be employed. Also, the buffer is normally only required at fish bearing streams, lakes, and rivers. We suggest helicopters, and airplanes on skis and wheels be added to the list of exceptions.

Stipulations 13 through 16 - No comment.

17. **Within the Goose Molting Habitat LUEA (Fig. II.B.2), water extraction from any lake used by molting geese shall not alter hydrological conditions that could adversely affect identified goose-feeding habitat along lakeshore margins.** 009

Comment: BPXA requests that the AO allow water withdrawals in the Goose Molting Habitat LUEA, if after consultation with the U.S. Fish and Wildlife Service, it is determined that any alteration of the hydrological conditions will not have an adverse affect on the goose feeding habitat.

18. **Except for approved crossings, alteration of the banks of a waterway is prohibited. Clearing of willows along the riparian zone is prohibited.** 010

Comment: BPXA suggests that the language relating to willows be changed to read, "Movement of equipment through willow stands shall be avoided where possible." This would make the stipulation consistent with the standard stipulation used by the State, NSB, and Alaska Coastal Management Program.

Overland Moves and Seismic Work

19. **Seismic work is not allowed within 1,200 feet of any cabin or known, long-term occupied campsite without permission of the AO.** 011

Comment: Is there an inventory of long-term occupied campsites? This provision is unrealistic without an inventory tied to a map or legal description. Furthermore, seismic work is of extremely short-term duration and is conducted during the winter season only and should pose no conflict with subsistence uses. This stipulation is unnecessary.

20. **The following restrictions apply to overland moves, seismic work, and any similar use of heavy equipment (other than actual excavations as part of construction) on unroaded surfaces:** 012

a. **Because polar bears are known to den predominantly within 25 miles of the coastline in the deeply drifted areas (6 feet or greater) adjacent to the high cut banks of drainages, seismic-program lines and overland moves should be aligned to avoid such areas by ¼ mile, if feasible. The cutting or compaction of such drifted snow is prohibited within 25 miles of the Beaufort Sea. Activities are prohibited within 1 mile of known or observed polar bear dens; obtain locations from U.S. Department of the Interior, Fish and Wildlife Service, (907) 786-3800. Operators are encouraged to apply for a letter of authorization from FWS to conduct activities in polar bear denning areas.** 012

Comment: There are 6 foot drifts of snow all along the rivers. If this stipulation is enforced, hundreds of square miles of land would be excluded. The word "compaction" should be clarified to exclude incidental compaction such as occurs when driving a vehicle over a snow drift.

c. **Travel up and down stream beds is prohibited to help avoid disturbance to riparian vegetation, stream-channel morphology, and resident fish populations.** 013

Comment: This stipulation could actually do more harm to stream beds since traffic moving near a meandering stream will have to make multiple crossings of the river instead of simply traveling along the river. Multiple crossings will increase risk of bank erosion, which is probably more damaging than incidental compaction. Appropriately conducted, as conditioned by typical tundra travel and fish habitat stipulations, travel up and down river channels can be done in an environmentally sound manner as is done routinely in other areas on the North Slope. There is no scientific evidence that demonstrates that vehicular compaction causes enough freezedown to harm stream-channel morphology and resident fish populations. Also, this stipulation contradicts stipulation 20.d (see below).

d. **Crossing of waterway courses shall be made using a low-angle approach in order to not disrupt the natural stream or lake bank.**

Comment: This is a valid stipulation and consistent with BMPs.

i. **When multiple trips over the same trails are taken, vehicles will not utilize the same tracks, thereby reducing the possibility of ruts.** 014

Comment: This restriction should exempt ice roads. The very purpose of ice roads is to encourage vehicular access across a singular roadway to eliminate adverse impacts to the tundra. Also, although this is a good practice most of the time, some occasions warrant single file travel (e.g., when moving through willow stands, near river bluffs or deep lakes to increase safety, near archaeological sites, etc.). We suggest adding the words "if feasible" to this stipulation.

j. **Ground operations are to begin only after the seasonal frost in the tundra and underlying mineral soils has reached a depth of 12 inches, and the average snow cover is 6 inches deep.** 015

Comment: Add "The exact date will be determined by the AO" to the end of this stipulation. 015

Oil and Gas Exploratory Drilling

Stipulations 21 and 22 - No comment.

23. Exploratory drilling is not allowed within 1,200 feet of any cabin or known, long-term occupied campsite without written permission of the BLM. 016

Comment: Similar to the comments in response to Stipulation #19, above, this language is difficult to apply without an inventory of long-term occupied campsites. Any impacts to cabins or long-term occupied campsites can be addressed by individual permits for exploratory drilling. Also, change "BLM" to "AO."

Facility Design and Construction

24. No comment.

25. Permanent oil and gas facilities (e.g., gravel roads, pads, airstrips, material sites), excluding pipelines, will not be permitted within a 1,640-foot buffer zone surrounding all goose-molting lakes, and within a 3,280-foot buffer zone surrounding all high-use lakes within the Goose Molting Habitat LUEA. Goose-molting lakes will be identified by the AO in consultation with FWS. 017

Comment: The need for any buffer around these areas should be determined on a case by case basis. Clearly there is no need for a year-round exclusion due to the short length of the summer molting season. The requirement that "permanent oil and gas facilities, excluding pipelines, must be set back at least 3,280 ft. from all high use lakes within the Goose Molting Habitat LUEA" should be deleted. Our review of the scientific information suggests that these buffer distances appear to be somewhat arbitrary.

26. To protect crucial caribou movement corridors for insect relief within 2 miles of the Beaufort Sea coastline including inlets and the Kogru River east of 152 36'30" west longitude, the only oil and gas permanent surface occupancy permitted will be that determined necessary by the AO, because other locations are either technically unfeasible or economically prohibitive. Examples of structures likely to be considered necessary under these criteria may include, but are not limited to: (1) a staging area, causeway, or dock that requires a year-round road to the inland area; 018

(2) a seawater-treatment plant and associated pipeline or road; and (3) a production pad and associated pipeline for an oilfield that cannot be produced from outside the 2-mile zone. Airports, camps, and some types of processing facilities are not likely to be considered necessary. When submitting a development and production plan that includes structures in this 2-mile zone, the lessee shall demonstrate to the satisfaction of the AO, in consultation with the State and NSB, the need for the location of permanent surface occupancy of structures within this zone. 018

Comment: This stipulation is not scientifically based and should be deleted. There are numerous studies of the impacts of oil and gas facilities on caribou that prove mitigative measures can be taken to off-set impacts (e.g., elevated or buried pipelines). Any impacts can be addressed in the approval of a development and production plan. (See (page 18) list of additional literature that the EIS authors should consult.)

27. Causeways and docks shall not be located in river mouths or deltas. Artificial gravel islands and bottom-founded structures may not be located in river mouths or active stream channels on river deltas, except as provided in the paragraph above. 019

Comment: See previous comments on page 4 regarding causeways. Add the work "generally" to the beginning of the first sentence to make it consistent with the rest of the stipulation.

28. Two narrow land corridors between Teshekpuk Lake and the Beaufort Sea have been identified as crucial caribou movement corridors. These areas lie northwest and east of Teshekpuk Lake (Fig. E-5). Within these two identified areas, the following requirements may be imposed. 020

d. No permanent surface facilities may be sited within a zone extending 4 miles eastward from the eastern shore of Teshekpuk Lake in the area between the lake and Kogru Inlet, as depicted on Figure E-5.

Comment: After, "No permanent surface facilities, add "excluding pipelines" to make it consistent with the rest of the stipulation (e.g., 28c which states, "Burial of pipelines may be required"). (See (page 18) list of additional literature that the EIS authors should consult.)

Stipulations 29 through 32 - No comment.

33. Within the Goose Molting Habitat LUEA, oil and gas facility layout shall incorporate features (e.g., temporary fences, siting/orientation) that screen/shield human activity from view of any goose-molting lake, as identified by the AO in consultation with FWS, within 3 kilometers. 021

Comment: The scientific rationale for this stipulation is not stated. BPXA believes that placement of temporary fences, etc., could have more of a detrimental effect on geese and other wildlife than the human activity that is being screened from their view.

Stipulations 34 and 35 - No comment.

34. To minimize delay or deflection of caribou movements, lessees should place the pipeline on the appropriate side of the road (depending upon general caribou movements in the area). 022

Comment: This stipulation is unnecessary since pipeline placement would be addressed during review of the Plan of Operations.

37. No comment.

38. At a minimum, above ground pipelines shall be elevated 5 feet, as measured from the ground to the bottom of the pipe, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. The AO, in consultation, with ADF&G, may make an exception if no feasible and prudent way exists to meet the requirement. 023

Comment: Change the first sentence to read "shall be elevated at least five feet."

39. Surface occupancy for the placement of any oil and gas facility, including roads, airstrips, and pipelines, will be prohibited in the Fish Habitat LUEA at the distances identified: . . . 024

Comment: Change to read "surface occupancy for the placement of any permanent oil and gas facility." Also, our previous comment on buffer strips to protect fish (page 5) applies to this stipulation.

40. Gravel mining sites required for development activities will be restricted to the minimum necessary to develop the field efficiently and with minimal environmental damage. Where feasible and prudent, gravel sites must be designed and constructed to function as water reservoirs for future use. Gravel mine sites must 025

not be located within an active floodplain of a watercourse unless the AO, in consultation with ADF&G, determines that there is no feasible and prudent alternative, or that a floodplain site would enhance fish and wildlife habitat after mining operations are completed and the site is closed.

Comment: Because there is little to no gravel present in much of the planning area, it is likely that gravel for any authorized development will need to be transported into the NPR-A from the closest feasible source outside NPR-A, such as the Colville River area. Therefore, as proposed, this stipulation would preclude the lessee from obtaining gravel from the Colville River floodplain, thereby necessitating long and expensive hauls of gravel from other upland sources on the North Slope. This additional haulage is likely to cause greater environmental impact than the simple act of removing gravel from a nearby floodplain source. This stipulation should be revised to eliminate the last sentence. Through the use of stipulations/guidelines and mining plan approvals, the instream gravel use can have minimal impacts.

41. Facilities, roads, airstrips, and pipelines will be sited out of the active floodplain of rivers and creeks with a minimum setback of 500 feet and 500 feet away from fish-bearing lake basins. 026

Comment: Delete the word "basins" at end of sentence and conclude with the word "lakes." The intent is to protect the waterbody, not to setback development from an entire watershed. See our previous comment on buffer strips to protect fish (page 5).

42. No comment.

43. The natural drainage pattern will be identified prior to and maintained during and after construction. Any fill placed adjacent to a stream or lake will be armored to limit erosion from flooding or wave action. Cross-drainage structures will be sited, maintained, and properly abandoned to prevent impoundments or alteration of local or areawide hydrology. 027

Comment: It does not make sense to require the use of armored fill adjacent to a stream or lake unless it is anticipated that a flood event will occur or hydrological conditions warrant. Most lakes and many streams in the planning area do not experience annual flood events. Furthermore, the use of armored fill may alter riparian vegetation and pose barriers to wildlife use and passage. The application of armored fill should occur only within a documented floodplain area.

Stipulations 44 through 47 - No comment.

48. Lessees must minimize the impact of industrial development on key wetlands. Key wetlands are those wetlands that are important to fish, waterfowl, and shorebirds because of their high value or scarcity in the region. Lessees must identify on a map or aerial photograph the largest surface area, including future expansion areas, within which a facility is to be sited or an activity is to occur. The AO will consult with FWS to identify key wetlands. To minimize impact, the lessee must avoid siting facilities in the identified wetlands unless no feasible and prudent alternatives exist. Key wetland types included (but are not limited to) fish-bearing lakes and streams, riparian shrub, and the following classes described by Bergman et al. (1977): shallow and deep-*Arctophila* ponds, deep-open lakes, basin-complex wetlands, and coastal wetlands. 028

Comment: Key wetlands have not yet been identified in the planning area. The process identified in this stipulation calls for identification of key wetlands by the AO in consultation with the USFWS. Since the US Army Corps of Engineers is the federal agency responsible for wetland permitting, BPXA suggests that they be included in the consultation process. Also, BPXA's standard operating procedures used when developing a Plan of Operations for any project involves identifying key wetland areas and ways in which to minimize impacts on those areas (e.g., reconfiguration of a pad, alternative pipeline routes, etc.). This standard operating procedure should be taken into account by the AO.

49. No surface occupancy for oil and gas development will be allowed within 1 mile of known long-term cabins or long-term campsites, except that pipelines and roads would be allowed if they are no closer than ¼ mile from such cabins or campsites. 029

Comment: Similar to Stipulation #19, this stipulation is impractical without an inventory of known long-term cabins or campsites.

Ground Transportation

Stipulations 50 through 52 - No comments.

Air Traffic

53. Use of aircraft larger than a Twin Otter by authorized users of the study area, including oil and gas lessees, from May 20 through August 20 within the Teshekpuk Lake Caribou LUEA will be for emergency purposes only. 030

Comment: Since the intent of this stipulation is to avoid disturbing caribou, BPXA feels that the word "Use" should be replaced with "Take-offs and landings". 030

Stipulations 54 through 58 - No comment.

Oilfield Abandonment

59. No comment.

60. Roads, airstrips, and other gravel fill shall be removed or modified upon field abandonment so as to render them unusable for enhanced access into and within the Goose Molting LUEA. 031

Comment: This stipulation is unnecessary. Stipulation #59 already provides for the removal of all facilities and the rehabilitation of the area upon abandonment. Furthermore, Stipulation #59 provides that the AO may determine if it is in the best interest of the public to retain some facilities (i.e. road or gravel pad for caribou insect relief). Specific rehabilitation requirements should be developed at the time of abandonment given the technology and land use considerations at the time.

Subsistence

61. During exploration, development, and production, the lessee shall monitor activity to determine its effects on subsistence and provide reports to BLM and the Subsistence Advisory Panel. 032

Comment: Please clarify the frequency the required reports must be submitted to the BLM and the Subsistence Advisory Panel. Also see comments in stipulation No. 64.

62. No comment.

63. The lessee shall notify the AO of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns. When conflict arises between subsistence hunters and the lessee over what steps should be taken to address concerns, the AO will resolve the issue. 033

Comment: Replace term "hunters" with the term "users."

64. Prior to submitting an exploration plan or development and production plan, the lessee shall consult with the potentially effected subsistence community(ies) (e.g., 034

Nuiqsut, Barrow, Atqasuk), the NSB, and the Subsistence Advisory Panel to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures that could be implemented by the operator to prevent unreasonable conflicts. Through this consultation, the lessee shall make every reasonable effort to ensure that exploration, development, and production activities are compatible with subsistence hunting and fishing activities and will not result in unreasonable interference with subsistence harvests in the planning area. 034

Comment: This stipulation presupposes that there will be potential conflicts with subsistence uses in the area. However, this is often not the case. BPXA maintains a close relationship on the North Slope with members of the resident Native community. We have been respectful of the need to maintain subsistence and traditional uses of the areas in which we are allowed to operate. The continued ability to communicate and seek advice from the Inupiat people has been a key to this cooperative relationship. Therefore, revise this stipulation as follows:

"Prior to submitting an exploration plan or development or production plan, the lessee shall consult with: a) the community(ies) in the subsistence area which includes the proposed area of operation; b) the NSB; and c) the Subsistence Advisory Panel. The lessee shall notify these parties of the siting, timing and methods of the proposed operation, including safeguards and other measures intended to avoid and/or minimize the impacts of the proposed operations on any subsistence activities in the area. The lessee shall make every reasonable effort to ensure that all exploration, development and production facilities are compatible with subsistence activities and will not result in unreasonable interference with subsistence harvest in the planning area....."

Orientation Program

65. No comment.

Traditional Land Use Sites

66. Lessees shall conduct an inventory of known traditional land use sites prior to any field activity. This inventory will include sites listed by the NSB's Inupiat History, Language, and Cultural Commission. Based on this inventory, the lessee shall develop a plan to avoid these sites and to mitigate any damage to them that might occur. The plan will also indicate how access to the site by local subsistence hunters will be provided. Copies of the plan will be submitted to BLM and the Subsistence Advisory Panel with any permit application for exploration and development. 035

Comment: BPXA believes that the inventory of known traditional land use sites should not be the sole responsibility of the lessee since it would make the lessee responsible if a site is inadvertently not identified. Therefore we suggest changing the wording of the first sentence to read, "Lessees will cooperate with BLM in conducting an inventory of . . . ." Also, please note that it is BPXA's standard practice to do an archaeological investigation of any area that we are planning to explore. BPXA works with the North Slope village elders, the Inupiat History, Language, and Cultural Commission, and the State Historic Preservation Office when conducting archaeological investigations. 035

Other Activities

Stipulations 67 and 68 - No comment.

69. A letter of nonobjection from the surface landowner or the Native corporation(s) that have selected surface lands will be required to be on file with the AO before entry on those lands. 036

Comment: Why is it necessary to obtain a letter of nonobjection for selected lands? This land is still owned and managed by the BLM. It is more appropriate to require that BLM provide notice to the entity that has selectad the land, rather than a letter of nonobjection.

Stipulations 70 through 78 - No comments.

79. Upon finding any cultural or paleontological resource, the authorized user, or his or her designated representative, shall notify the AO and suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the AO. 037

Comment: Change to read "Upon finding any potential cultural or paleontological resource. . . ". It is BPXA's standard operating procedure to stop operations when a possible cultural or paleontological site is discovered during operations.

80. Petroleum exploration and production activities must not be conducted within ½ mile of occupied grizzly bear dens, unless alternative mitigative measures are approved by the AO in consultation with ADF&G. 038

Comment: Add identified by the ADFG after the phrase "bear dens."

Stipulations 81 and 82 - No comments.

II.D Comparison of Alternatives

The Comparison of Management Actions displayed in Table II.D.1, pages II-36 to II-37, states under Alternative E that the Umiat Recreation Site LUEA is unavailable for oil and gas leasing. However, this same area is available for oil and gas leasing under Alternatives C and D. This statement is also inconsistent with the summary found in Table IV.F-1 where the Umiat Recreation Site LUEA is listed as available for oil and gas leasing. This discrepancy needs to be resolved. 039

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

Overall, the DEIS covers the principal issues of concern related to development of NPR-A. However, the scientific literature is not adequately reviewed in this DEIS, and many references cited in the text are not in the "Bibliography" at the end of this document. Thus, it is not possible to check details or determine the accuracy of many statements in the DEIS. 040

One of the most important aspects of this document is the frequently-stated conclusion that impacts "may not be detectable above the natural fluctuations of the population and survey methods/data available" (e.g., see Table II.D.2, Birds). It is important to note that after over 20 years of study by industry and government on terrestrial and aquatic fish and wildlife research in North Slope ecosystems, we still cannot always discriminate between natural variation and human/industry-caused variation. However, it should be recognized that a substantial time-series of data on fish and wildlife populations and their interactions with North Slope oil fields exists, and can be used to make management plans in NPR-A.

There is a some inconsistency in the DEIS presentation of the significance, duration, and geographic scale of impacts. In addition, some conclusions are not adequately supported by data, which makes it difficult to assess potential impacts of the various alternatives. We suggest the authors develop a definition of what is meant by "significant" when referring to impacts. 041

Comments Relating to Mammals

A considerable amount of literature (published and industry reports) describing North Slope mammal populations in relation to oil fields has been overlooked and was not utilized in the DEIS. There are many papers and reports on wildlife, and caribou in particular, which need to be reviewed and summarized. This is understandable 042

because much of this literature has been recently published and is not yet widely disseminated. Note the following papers in peer-reviewed journals, and an Alaska Oil and Gas Association (AOGA) report produced in an government-industry cooperative project specifically dealing with mitigation of oil field impacts on caribou: 042

Ballard, W.B., and M.A. Cronin. 1995. Arctic Alaska caribou herds in relation to oil field development. Pages 35-46 in S.Q. Foster, S. Pas, S. Rush, and O. Thorne II, editors. Proceedings of the 6th Symposium on Issues and Technology in the Management of Impacted Wildlife, Thorne Ecological Institute, April 6-8, 1994, Glenwood Springs, Colorado.

Pollard, R.H., W.B. Ballard, L.E. Noel, and M.A. Cronin. 1996. Summer distribution of caribou, *Rangifer tarandus granti*, in the area of the Prudhoe Bay Oil Field, Alaska, 1990-1994. *Canadian Field-Naturalist* 110(4): 679-674.

Pollard, R.H., W.B. Ballard, L.E. Noel, and M.A. Cronin. 1996. Parasitic insect abundance and microclimate of gravel pads and tundra within the Prudhoe Bay Oil Field, Alaska, in relation to use by caribou, *Rangifer tarandus granti*. *Canadian Field-Naturalist* 110(4): 649-658.

Cronin, M.A., W.B. Ballard, J.D. Bryan, B.J. Pierson, and J.D. McKendrick. 1998. Northern Alaska oil fields and caribou: A commentary. *Biological Conservation* 83:195-208.

Cronin, M.A., B.J. Pierson, S.R. Johnson, L.E. Noel, and W.B. Ballard. 1997. Caribou population density in the Prudhoe Bay region of Alaska. *The Journal of Wildlife Research* 2:59-68.

Cronin, M.A., G.M. Durner, S.C. Amstrup, L.E. Noel, and W.B. Ballard. In Press. Caribou distribution relative to oil field infrastructure in the Prudhoe Bay oil field, Alaska. *Arctic*.

Noel, L.E., R.H. Pollard, W.B. Ballard, and M.A. Cronin. In Press. Activity and use of gravel pads and tundra by caribou within the Prudhoe Bay oil field, Alaska. *Canadian Field-Naturalist*.

Cronin, M.A., W.B. Ballard, J. Truett, and R.H. Pollard. 1994. Mitigation of the effects of oil field development and transportation corridors on caribou. Report by LGL Alaska Research Associates, Inc., for the Alaska Oil and Gas Association, Anchorage, Alaska.

These documents show clearly that 1) caribou populations have increased in the areas of existing oil fields; and 2) impacts on individuals are equivocal, and limited to some animals distancing themselves from roads during only the calving season. 042

This DEIS should thoroughly examine the caribou/oil field literature and make a concerted effort to describe the available data and published information on caribou and other species, which have fared quite well in Alaska oil fields. The papers by Cronin et al. in *Biological Conservation* and the *Journal of Wildlife Research* have begun this process, and the NPR-A DEIS should continue this scientific approach to assessing impacts, mitigation, and practical management.

Comments Relating to Birds

Birds are widely recognized as important biological resources within the northeast NPR-A planning area and have been described quite well in this draft EIS. The various sections on birds are generally well-organized and logically presented. The authors of the bird sections of this DEIS have relied on selected literature to document the (a) description of the affected environment and (b) environmental consequences. However, much of the literature is not current, and a large amount of historical and current literature and information relevant to this EIS are not used. 043

On pages II-52 and II-53 (Table II.D.2, Alternatives D vs. E, Multiple Sales) it is suggested that Alternative D could cause a substantial change in bird populations and/or distribution, but that alternative E (a more intensive development alternative) will not significantly affect planing area bird populations. It is not logical that a more intensive development alternative would have less impacts.

Comments Relating to Fish

This chapter provides a literature review and description of fish resources likely to be affected by NPR-A development. The DEIS states that fisheries-related information relevant to the NPR-A area has been obtained from studies in nearby areas, particularly in the Prudhoe Bay region, but the text does not reference that work. Many reports and published, peer-reviewed scientific papers on the effects of oil and gas development on fish resources in this region are available, but were not used in the DEIS. A list of relevant publications developed from over 20 years of fisheries studies in the Prudhoe Bay region is attached. A recent review of arctic fishes which could be useful is provided in Reynolds, ed. (1997) Fish Ecology in North America, American Fisheries Society Symposium 19. 044

Some of the citations that are referenced or summarized in the DEIS are obscure and only minimally relevant to the topic of fish resources. For example, Bendock (1997) is

cited frequently, but this is an unpublished and unwritten verbal report given at a conference in 1997. Another report (Parametrix 1996), is not listed in the Bibliography. Other relevant work could be used including such references as Sloan (1976) "Anadromous fish study. Fresh water fish and their winter habitat in NPR-A" and Wilson et al. (1977) "Winter water availability and use conflicts as related to fish and wildlife in Arctic Alaska - a synthesis of information". Kogl and Schell (1975), "Colville River delta fisheries research", also provides useful information. 044

A fisheries data base covering the Alaskan Arctic also is available but apparently was not used in the preparation of the DEIS (Baker, Fechhelm, Maritzen, Treybig, Baggett, Schmidt, and Griffiths. 1986. Data base for Arctic anadromous fishes: Technical Manual). The data base was prepared in 1986 for Standard Alaska Production Company as a guide to all published and unpublished literature on Arctic anadromous fishes from historic time to the mid-1980s. Many references relevant to the NPR-A area are summarized in this data base, but are not cited in the DEIS, including:

> Bendock (1982). Inventory and cataloging of arctic area waters. ADF&G Prog. Rept. 23
>
> Hablett (1979). Fish investigations conducted within the National Petroleum Reserve on the North Slope of Alaska, 1977-78.
>
> Schmidt et al. (1983). Nearshore fish survey in the western Beaufort Sea: Harrison Bay to Elson Lagoon.
>
> Burger and Wilmot (1979). Genetic studies of freshwater fishes on The National Petroleum Reserve in Alaska.
>
> Craig and Schmidt (1982). Fisheries surveys at potential dredging sites at North Slope villages: Wainwright, Point Lay, Atkasook, Nuiqsut and Kaktovik.

Full citations to these and other documents can be obtained from the Anadromous Fish Data Base, which is available from BPXA or LGL Alaska Research Associates.

In summary, we feel the section on fish resources could be expanded to include review of industry sponsored reports and scientific papers. The Anadromous Fish Data Base also contains reports with relevant information.

Some specific points that could be addressed in the DEIS are listed below:

- The name Arctic char should be changed to Dolly Varden in the DEIS. For years, systematists have argued the taxonomic status of the char group, but have agreed 045

based on meristic, habitat use, and genetic data that the char present in the central Alaskan Beaufort Sea region is the northern Dolly Varden, *Salvelinus malma*. 045

- Figure III.B.3-3 illustrates catch of fish in the Colville River commercial fishery. Because the number of nets, fathoms fished, days fished, etc. constitute effort, and varying degrees of effort are expended annually, these catch data would be more meaningful if corrected for effort. Catch-per-unit-effort statistics should be presented so that valid interannual comparisons of harvest level can be made. 046

- The fish resources section provides little biological data. However, considerable biological data are available for adjacent areas in the industry-sponsored reports and publications referenced above. The DEIS document would be more complete if information on char, whitefish, and marine fish species were included. Data such as age distribution, age at length, age at sexual maturity, fishery catch composition, seasonal and annual abundance by cohort, growth, condition, length/weight relationship, and natural mortality rate could be useful. These biological parameters have been identified as important indicators of fish population status and "health" in the Prudhoe Bay region, and likely will be parameters used to evaluate fish populations in NPR-A in the future. While not all of these data are available for all species, a considerable body of information exists that could be used. 047

- On page III-B-10 the narrative states that with the first signs of spring, adult and juvenile migratory fish move out of rivers and into nearshore brackish waters. This migratory pattern varies greatly by species, and this should be recognized in the narrative. Dolly Varden adults and subadults probably move out of streams earliest, while juvenile Dolly Varden remain in fresh water during the summer. When they reach approximately age 3, Dolly Varden enter the nearshore environment. Broad whitefish adults move out of rivers in spring, and some size classes of juveniles do also. Small broad whitefish appear to remain in the rivers until the middle of summer, enter the nearshore marine environment for a very short period of time and remain close to their stream (delta) of origin, then return back to fresh water early in the fall. Least cisco juveniles and adults appear to move out of rivers simultaneously in spring. For Arctic cisco, recruitment of age 0 fish comes from Canada during strong east-wind years, further complicating this picture. All of this life history information is available in the industry-sponsored reports and publications mentioned above. 048

The origin of Arctic cisco inhabiting the Colville River system is the Mackenzie River in Canada. This conclusion has been supported by considerable work, and should be attributed to the original researchers (Gallaway et al. 1983; Fechhelm and Fissel 1988; Fechhelm and Griffiths 1990), and not to Thorsteinson and Wilson (1996). 049

This section also discusses dietary overlap among species of fish. Missing from that discussion is the dietary overlap between migratory fishes and coastal birds, especially oldsquaw ducks. Competition for food among oidsquaw ducks and Arctic cisco, for example, is discussed in the Simpson Lagoon study reports (OCSEAP, Feb. 1981, Vols. 7 & 8). 050

This section could acknowledge that site-specific knowledge of fish species composition, distribution, abundance, and habitat use patterns in fresh waters and nearshore waters of NPR-A is very limited. It is important to note that the discussion presented is based almost entirely on work done outside NPR-A. 051

- The commercial fishery discussion (Page III-B-10) appears to be based upon 1985 and 1988 reports. There are a continuous series of reports since that time through 1998 which contain fishery statistics and are available. This section should be updated with more current information. 052

- A similar comment to No. 5 above is relevant to the Social Systems section, specifically p. III-C-25. Descriptions of the Nuiqsut subsistence fishery and harvest data are from mid-1980s data. This section should be updated with more recent data. 053

IV. ENVIRONMENTAL CONSEQUENCES

Comments Relating to Mammals

In Section IVB, page IV-B-10, information is presented on activities that might disturb mammals. Estimates of the total amount of activity expected each year would be useful to assess impacts. 054

In Section IVB, page IV-B-11, it is stated that effects on denning polar bears is likely to affect only a few bears and that the impact would not be significant to the population. We agree with this point. However, there are published studies showing little or no impact of seismic activity on denning polar bears which could be cited. 055

In Section IVC, page IV-C-25, it is suggested that mammals may avoid human camps. Grizzly bears, polar bears, and arctic foxes are possible exceptions to this point, as these species commonly visit oil field facilities. 056

In Section IVC, page IV-C-26, the statement that caribou that winter to the south are less tolerant of human activities implies that these caribou have not been exposed to disturbance on a regular basis. This needs documentation. This section also needs to clearly articulate what we know about the effects of roads and pipelines on caribou. 057

Much of this information is summarized in the Cronin et al. (1994) report referenced previously (Page 18). 057

On page IV-C-27, the last sentence in the caribou section is: "However, displacement of calving caribou due to disturbance has resulted in a significant functional loss of habitat on the oilfields." There are two problems with this paragraph. First, this sentence is the conclusion to a paragraph on use of gravel, not disturbance. The second problem is that the conclusion is not well-founded, and not referenced. There is a growing literature that the oil fields actually provide good summer habitat by providing areas for relief from insects. Other potential impacts on caribou in existing oil fields are also described in this section of the DEIS. On page IV-C-26 it is stated that the Central Arctic caribou herd (CAH), which uses habitats in existing oil fields, have experienced losses of productivity, loss of summer habitat, and a population decline. These points are equivocal, and have been addressed in recent peer-reviewed publications listed previously (Page 18). Note that the suggestion of loss of productivity is based on a limited study, and does not consider the important factors of population density, habitat differences, and movements among areas (Cronin et al. 1997). The contention that summer habitat has been lost is not consistent with the multi-year study conducted by BPXA showing extensive use of, and movement through, the existing oil fields (Pollard et al. 1996, Noel et al. In Press). The suggestion that the western segment of the CAH, which is in contact with existing oil fields, has declined has not considered the rapid growth of the herd during the first 15 years of the oil field development or the relative growth of adjacent herds (Cronin et al. 1998). In addition, the recent increase in the western segment of the CAH between 1995-1997 indicates that there have been no detectable negative impacts of the oil field at the herd level. The whole issue of oil fields and caribou is complex and needs thorough review in the DEIS. However, it seems clear that with the proper mitigation and management practices, impacts on caribou can be minimal. 058

On page IV-F-11, it is suggested that an east-west road will shift calving distributions and block movements to the coast during the summer. Experience in the Prudhoe Bay, Milne Point, and Kuparuk oil fields suggest these impacts will not occur. Although some female caribou with calves move away from human activity during the calving period, the general calving areas have continued to be used for several years after oil field development. With regard to the potential blocking of movements to the coast, note that large aggregations of caribou occur annually north of the Spine road and readily move through existing oil fields to access the coast (Pollard et al. 1996). 059

On page IV-C-25 it says that bears are frightened by noise and other disturbances, but then says that bears are attracted to human disturbances because they begin to associate the stimuli with food. This apparent contradiction should be clarified with a discussion of habituation. 060

In Section IVC, page IV-C-25, the statement that if caribou abundance was affected, wolf abundance could also be affected is somewhat speculative. Effects on caribou would have to be very major to have an effect on wolves. Predator-prey dynamics are complex and many factors need to be considered. 061

In Section IVC, page IV-C-25, it would be useful to note how much riparian habitat is likely to be affected so that the effect on wolverines can be assessed. 062

In Section IVC, page IV-C-25, the authors make reference to Reynolds and LaPlant (1986) in their statement that movements of muskoxen away from seismic operations did not exceed 5 km and had no apparent effect on muskoxen distribution. This is inconsistent with the later conclusion that muskoxen responses to seismic activity are expected to be a gradual and temporary avoidance of the area. Another contradictory statement is made by the authors when they cite Jingfors (1982) in their statement that muskoxen may be more vulnerable to oil exploration than caribou, then add that they may be more likely than caribou to habituate. 063

In Section IVC, page IV-C-25, the effects of oil spills on caribou, moose, grizzly bears, and musk oxen has been described. It seems unlikely that these species would get oiled, especially to the point of causing death. It is also suggested that if spills occur near streams and lakes they may affect foraging areas over larger areas. Oil on water may be transported further than on land, but if the oil is in the water it will not affect mammal foraging areas except along the shoreline. 064

On page IV-C-31, the conclusion for multiple sales that increased traffic would displace some caribou, moose, muskoxen, grizzly bears, wolves, and wolverines, but not significantly affect Arctic Slope populations is a reasonable conclusion, but should be referenced. Similarly, it is reasonable that a fourfold increase in exploratory wells, production pads, pipelines, etc. would only result in a small increase in noise and disturbance to marine mammals, but this should be referenced. 065

In the section on Endangered and Threatened Species, on page IV-C-34, the conclusion that any effects on bowhead whales as a result of barge or other vessel traffic are likely to be minimal is reasonable, but needs to be documented. 066

In Section IV G, page IV-G-6, the proportion of the caribou calving area that might be experience 4-km displacement under a worst case scenario should be estimated. The authors should compare this with current and historical calving areas. Also, the authors need to establish if calving habitat is limiting the caribou populations. Experience with the CAH suggests it is not. 067

In Section IV G, page IV-G-6, global warming is considered as a cumulative impact. The authors need to first establish that the petroleum produced in NPR-A will contribute 068

to global warming. However, given the uncertainties involved and long-term climatic changes and fluctuations, the conclusion about long-term effects on tundra ecosystems are not likely to be simple to predict, and should not be presented as such. 068

In Section IVK, page IV-K-2, impacts of a road associated with a pipeline are discussed, but earlier sections stated that there would be no road associated with the pipeline. 069

Comments Relating to Birds

In Section IVB page IV-B-7, the statement about the tendency of North Slope birds or mammals "to habituate to particular factors" is a very important. However, it is only mentioned once or twice in this entire document. For example, stipulations about structures near lakes (stipulation no. 25) may be unnecessary if birds readily habituate to human activity. This seems to be the case with snow geese which use brood rearing habitats around the Endicott development. 070

In Section IVB page IV-B-7, it may not be valid to extrapolate impacts in the Lisburne Unit (Murphy and Anderson 1993) to potential impacts in northeast NPR-A. 071

In Section IVB page IV-B-8, something has been left out of this sentence; it doesn't make sense the way it is currently worded. 072

In Section IVB page IV-B-9, the gyrfalcon work conducted by Platt in the Richardson Mountains, northern Yukon Territory, Canada, in the 1970's is cited. However, an important aspect of the breeding biology, unknown to Platt at the time of his studies, was that gyrfalcons, golden eagles, rough-legged hawks, and in some instances common ravens, often rotate or cycle in their use of traditional nests among different years. In one year a site will be occupied by a pair of gyrfalcons, but the next year that same nest may be occupied by a pair of golden eagles (see discussion about gyrfalcons in Johnson and Herter 1989). 073

In Section IVG, page IV-G-6, the basis for the various conclusions regarding the number of breeding seasons required for recovery of various bird species affected by disturbances or oil spills is unclear. It is important that the basis for these conclusions is clearly stated and documented with references. 074

In Section IVG, page IV-G-8, the predictions that global climate change may cause taiga forests to advance into tundra-areas and adversely affect tundra bird and mammal populations is highly speculative. In addition, the reference for this prediction (Anderson and Weller 1996) does not make such a prediction, and this reference is one of the many that are not listed in the Bibliography section. Predictions about global climate change need to be supported with references from the scientific literature. 075

In Section IVH, pages IV-H-1 and IV-H-2, it is said that some aircraft disturbance, such as those caused by aerial wildlife surveys, would be exempt from stipulations. We recommend that a uniformly applied set of stipulations be imposed on both industry and government activities. 076

Comments Relating to Fish

This section of the DEIS presents scenarios of potential effects on fish of five alternative oil and gas development schemes. Much of this material is subjective and speculative, since little empirical evidence is available for the NPR-A area. The section of the DEIS in which literature is reviewed appears to omit published information on the effects of Arctic oil and gas development collected in the Prudhoe Bay region for the past several decades. A great deal is known about how these developments have affected freshwater, anadromous, amphidromous, and marine fish species, and should be thoroughly reviewed and incorporated in the alternatives analyses.

Following are specific comments relating to the Alternatives section:

- Under Alternative B, in the discussion of subsistence, the document mentions concerns about reduced fish size and harvest size in the Nuiqsut village fishery. Data collected over the past decade do not support these concerns. However, population dynamics modeling of least and Arctic ciscoes and broad whitefish in the Colville River should be undertaken to evaluate the status of these populations relative to natural mortality and commercial and subsistence fishing harvests. 077
- Alternative E states that gravel removal and construction of pads, roads, etc. in high density areas are expected to cause spawning failure and mortality for many of the fish affected. It is not clear why these severe effects are expected. The document should back up such a conclusion by describing the process of fish mortality and fish spawning failure from removing gravel or placing it on the tundra. These effects have not occurred in the Prudhoe Bay region, where gravel for roads and pads has been extracted and used for decades. 078

  Alternative E also mentions that oil and gas development in offshore waters could affect the movement of coastal marine and migratory fish. This scenario is unlikely given the experience that industry has obtained in the Prudhoe Bay region. The DEIS does not reference the extensive published literature on the effects of coastal breached causeways on nearshore fish populations. 079

  Alternative E also states that small coastal structures are not expected to adversely affect fish "since they tend to inhabit waters further offshore." Please note that fish inhabit the entire nearshore zone from the beach to several kilometers offshore. If anything, the waters nearest to the beach are more heavily used by migratory fish 080

than offshore waters. However, it is true that small coastal structures, properly designed, will not affect fish. 080

APPENDICES

Appendix A - Inventory and Monitoring

Appendix A describes inventory and monitoring recommendations for long-term data collection relative to oil and gas development in NPR-A. BPXA agrees and supports the recommendations made regarding fish populations. An issue-based approach to monitoring will focus these studies on the information needed to resolve important questions and to ensure mitigation measures are appropriate. This approach has been successfully used by industry and the North Slope Borough to resolve fisheries issues in the Prudhoe Bay region.

BIBLIOGRAPHY 081

The bibliography of references cited or otherwise used in the preparation of the DEIS is very deficient in the fishery area. As mentioned above, the DEIS should be updated and expanded by including information from more recent publications and from the industry-sponsored reports and published literature on effects of Prudhoe Bay region development on fish populations. In many cases, this described and published information has been collected from the same populations of fish inhabiting the NPR-A region. It is highly likely that least cisco and Arctic cisco, Dolly Varden, broad whitefish, and other species of fish that inhabit the Colville River disperse during summer both east and west of the Colville Delta. Thus, components of these populations may be found both in NPR-A waters and the Prudhoe Bay region. Information collected by industry fishery biologists around Prudhoe Bay may be directly applicable to these species that use portions of NPR-A. At a minimum, this large body of literature should be recognized, cited, and listed as knowledge which is relevant to the potential future development of oil and gas resources in NPR-A.

ATTACHMENT

LGL Alaska Research Associates, Inc.

Bibliography of Published Literature and
Manuscripts for Peer-Reviewed Journals,
Prudhoe Bay Regional Fish Monitoring Programs

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Note: Manuscripts submitted to or in press in a journal listed above can be obtained from LGL Alaska Research Associates, Inc., Anchorage, Alaska.

1658-001
The BLM believes the analysis in this IAP/EIS is adequate for oil and gas lease sales, but any further development, including an exploratory drilling program or the construction of the infrastructure necessary for development of an oil discovery, would require further NEPA analysis. The additional analysis would be based on specific and detailed information about where and what kind of activity would occur and would result in the appropriate NEPA documentation for specific projects. The purpose of this EIS is to determine if BLM will conduct oil and gas lease sales within the planning area and, if so, identify the lands that will be made available for leasing (see Sec. 1A), the protection and the enhanced management that will be implemented for surface resources within the planning area.

1658-002
This comment is addressed in the Preferred Alternative stipulations.

1658-003
This comment is addressed in Preferred Alternative Stipulations 35 and 24j. The BLM addressed the comment throughout the Preferred Alternative stipulations.

1658-004
The Exception Clause criteria, included in the Preferred Alternative, is described in the introductory paragraphs preceding specific stipulations (Sec. II.C.7). The BLM believes that the modification ensures flexibility to accommodate unusual, unexpected, or new circumstances while avoiding erosion of the protection measure. If the lessee can demonstrate to the Authorized Officer that (1) a specific BMP is economically, technically unfeasible or is an environmentally preferable solution, and (2) that implementation of the BMP will accomplish the objectives of the stipulation in question, the BMP may be applied.

1658-005
Spill prevention and response experts from Federal, State, and NSB regulatory and resource agencies participating in the NPR-A planning process believe that the setbacks identified in Preferred Alternative Stipulations 14, 16, 39, and 41 provide reasonable protection for water quality, fisheries, vegetation, land use, and other surface resources in and near lakes and streams. Note that setbacks identified in Preferred Alternative Stipulation 39 are intended to protect all surface resources that depend on and are interconnected to the waterbody, not just fisheries. Please see Responses 1658-006, -007, -008, -019, -024, and -026.

1658-006
This comment is addressed in Preferred Alternative Stipulation 9.

1658-007
This comment is addressed in Preferred Alternative Stipulations 14 and 24m.

1658-008
This comment is partly addressed in Preferred Alternative Stipulations 16 and 24n. Stipulation 16 expands the exceptions to include ski planes. Exceptions to the 500-ft standard are based on the water/ice dependency of the transport vehicle. Unlike motorboats, floatplanes, and ski planes, helicopters can refuel on land. Stipulation 24n is the BLM standard for overland moves and seismic operations. This standard does not require a waterbody setback for refueling during the winter season.

Water quality, fisheries, and spill-prevention and response experts from the NPR-A planning team believe that 500 ft is a reasonable setback to protect water quality and fisheries resources from overfills and spills during refueling; other experts may disagree.

1658-009
This comment is addressed in Preferred Alternative Stipulation 21.

1658-010
This comment is addressed in Preferred Alternative Stipulation 22. The prohibition against "clearing" willows does not preclude limited "movement through" willows, as long as the movement does not result in significant damage or removal.

1658-011
This comment is partly addressed in Preferred Alternative Stipulation 23. The BLM will inventory long-term camps and cabins during the 1998 summer season and integrate these facilities into the Traditional Land Use Inventory (TLUI). The BLM will use the TLUI as the database to establish all camp and cabin setbacks.

1658-012
This comment is addressed in Preferred Alternative Stipulation 24a.

1658-013
This comment is addressed in the Preferred Alternative Stipulations. Stipulation 20c (of the draft EIS) has been deleted from the Preferred Alternative.

1658-014
This comment is addressed in Preferred Alternative Stipulation 24h.

1658-015
This comment is addressed in Preferred Alternative Stipulation 24j.

1658-016
Please see Response 1658-011.

1658-017
Although studies of the short-term effects of disturbance of brant have been done, comparable studies indicating the long-term effects on molting populations have not. While the commenter is correct in implying that the actual buffer size needed to protect molting geese is unknown, eliminating buffers altogether is not supported by the studies that have been done. Please refer to Section IV.F.8.b.

1658-018
Stipulation 26 (of the draft EIS) has been deleted because the coastal area in question is either not available for leasing, or limited by surface-occupancy measures in Preferred Alternative Stipulation 32. The author responsible for terrestrial mammals has reviewed the literature list.

1658-019
Preferred Alternative Stipulation 30 has been reordered to alleviate confusion regarding limitations on the construction of causeways, docks, artificial gravel islands, and bottom-founded structures. The stipulation (consistent with State of Alaska stipulations) prohibits construction of these structures in river mouths and deltas. The Authorized Officer may approve causeways, docks, and so forth outside river mouths and streams.

1658-020
The Preferred Alternative (reaffirmed in Preferred Alternative Stipulation 31) prohibits construction of any exploration and development facilities in portions of the area described in Stipulation 28 (of the draft EIS). The movement corridor to the northwest of Teshekpuk Lake within the Goose Molting LUEA is unavailable for leasing, and no oil and gas facilities or pipelines are allowed.

1658-021
The Preferred Alternative prohibits leasing in the Goose Molting LUEA. Alternatives A through E

Stipulation 33 has been deleted.

1658-022
Placement of a pipeline will be addressed during the development plan review. One purpose of Preferred Alternative Stipulation 35 is to provide the lessee with notice of specific requirements, avoid ambiguities and uncertainties, and facilitate informed economic decisionmaking.

1658-023
This comment is addressed by Preferred Alternative Stipulation 37.

1658-024
This comment is partly addressed in Preferred Alternative Stipulation 39. Also, please see Response 1658-005.

1658-025
The stipulation prohibits gravel mining in floodplains within the NPR-A only if the Authorized Officer, in consultation with appropriate agencies, determines that: (1) there is a feasible and prudent alternative, or (2) that once closed, a floodplain site could not be used to enhance fish and wildlife habitat.

The eastern boundary of the NPR-A lies along the western bank of the Colville River. Portions that lie along the western edge of the Colville River Delta are owned by other entities. The State of Alaska owns the bed of the Colville River to the highest water mark on the western bank. Operators would be required to obtain permits for gravel mining in the Colville River area from the appropriate State or private landowners.

1658-026
The comment is addressed in Preferred Alternative Stipulation 41. The intent of the stipulation is to protect the bed and adjacent 500-ft setback for specific lakes and streams, not entire watersheds. Water quality, fisheries, vegetation, land use, and spill-prevention and response experts from Federal, State, and NSB regulatory and resource agencies participating in the NPR-A planning process believe that 500 ft is a reasonable setback to protect water quality, fisheries, vegetation, and other surface resources in and near lakes and streams.

1658-027
This comment is addressed in Preferred Alternative Stipulation 43.

1658-028
This comment is addressed in Preferred Alternative Stipulation 46.

1658-029
Please see Response 1658-011.

1658-030
The purpose of Preferred Alternative Stipulation 52 is to protect caribou from disturbing noises during the precalving, calving, and postcalving periods. Caribou are most sensitive during these periods. The stipulation prohibits all authorized users of the planning area from flying aircraft larger than a Twin Otter in the Teshekpuk Lake Caribou LUEA during the 90-day summer window. Authorized users flying aircraft larger than a Twin Otter are required to avoid the Caribou LUEA airspace.

1658-031
This comment is addressed by the deletion of Alternatives A through E Stipulation 60 from the Preferred Alternative.

1658-032
This comment is addressed in Preferred Alternative Stipulation 59.

1658-033
This comment is addressed in Preferred Alternative Stipulation 61. Also, please see Response 1658-034.

1658-034
Preferred Alternative Stipulation 61 adapts the consultation and conflict resolution process developed for MMS offshore Lease Sale 170 for use in the NPR-A. A key element in the consultation process calls for the lessee to meet and consult with local affected communities, the NSB, and the Subsistence Advisory Panel before developing a proposed operations plan. With the concepts and ideas conveyed during consultation in mind, the lessee will then proceed with development, exploration, and operating plans that ensure activities will not unreasonably interfere with subsistence harvests.

1658-035
This comment is addressed in Preferred Alternative Stipulation 64. Stipulation 64 identifies the traditional sites baseline, i.e., the most current TLUI, and requiring the Authorized Officer to approve inventory.

1658-036
The BLM is required by Regulation (43 CFR 2650.1) to obtain and consider the views of concerned regions and villages before making contracts or issuing leases, permits, rights-of-way, or easements on land (within the NPR-A) selected by a Native corporation. Traditionally, BLM receives letters of non-objection from the Natives. The BLM deleted Stipulation 69 (in the draft EIS) from the Preferred Alternative Stipulations to avoid duplication of existing regulatory requirements.

1658-037
This comment is addressed in Preferred Alternative Stipulation 75. This stipulation requires that a cultural and paleontological resources survey be conducted prior to ground-disturbing activity. The stipulation is consistent with State oil and gas leasing requirements.

1658-038
This comment is addressed in Preferred Alternative Stipulation 76.

1658-039
Table II.D.1 has been corrected.

1658-040
The bibliography for the final EIS has been revised to include citations noted as missing in the draft EIS. Response 1313-001 addresses the adequacy of scientific literature in the draft EIS.

1658-041
The EIS describes a variety of physical, biological, and sociocultural resources in Section III.B and analyzes the potential effects of oil and gas and other activities on these resources in Sections IV.B through M. The analyses of these effects are based on numerous assumptions, as noted in Section IV.A. These assumptions result in some level of uncertainty that is associated with each analysis. The variety of resources and analytical uncertainties impose some difficulties "in developing a definition of what is meant by "significant" when referring to impacts." Unless specifically defined, the term "significant" is considered to mean an impact that also might be described as considerable, consequential, high, or major. All of these terms reflect to some degree the imprecise nature of the analyses of the potential effects. They do, however, indicate a relative level of impacts that are greater than low, minor, or insignificant.

Given the range of resources covered in the EIS and the variations in the types and levels of activities that might affect these resources, it seems reasonable to expect some variation in the duration of impacts.

Although the Northeast NPR-A Planning Area has a specific location, some of the resources described in the EIS cover a much larger area. Also, the location of some resources can be specifically identified, while others cannot. Some resources can move about while others are immobile. Thus, the geographic range over which impacts may occur is quite variable.

1658-042
A review of the literature describing North Slope mammal populations—in regards to effects-influences of oil development on caribou, muskoxen, arctic foxes, and other terrestrial mammals—is included in Section IV. C. 9. a. The analysis in this section has been revised to include Cronin et al., 1997, 1998. Other literature listed in this comment was cited in the section of the draft EIS, if relevant and available to the public (actually published rather than "In Press" such as Noel et al., In press).

1658-043
Other than the publications cited, the commenter does not clearly specify which historical and current literature would better or exhaustively support statements in the document. Because the document is not intended as a literary review, the BLM did not cite all relevant publications in the EIS format. Table II D.2 has been revised in response to this comment.

1658-044
Environmental law requires that information in an EIS be based on the best science available.
The information must be presented succinctly and be comprehensible to everyone, not just those of academic interest. For this reason, the description of the affected environment only characterizes existing fishery resources of the northeastern NPR-A. Studies cited in the draft EIS are among the best available and fully adequate to assess probable effects of activities associated with this draft EIS.

Information collected from these studies is presented so that everyone can gain a basic understanding of the fishery resources of the northeastern NPR-A. Suggested sources of additional information, such as *Fish Ecology in North America*, contain little general information pertaining to fishery resources of the northeastern NPR-A. The same is true of almost all studies conducted to the east of the Colville River and studies conducted near the northeastern NPR-A. In contrast to this, Bendock's *Fish Resources of the Northeastern NPR-A* presentation (during the 1997 fisheries conference in Anchorage) was summarized in the *NPR-A Symposium Pro-ceedings* and cited in the draft EIS. This work and others (cited in the draft EIS) were considered relevant and used to describe the affected environment.

Bendock (1982) focused on areas east of the Colville River and this is the reason that work was not used. However, in 1978, Bendock cataloged the fishes of the NPR-A area and emphasized the Colville River drainage; this work was included in his later survey pertaining to the fishes of the northeastern NPR-A. The work was cited in the draft EIS (Bendock and Burr, 1984). Sources such as Hablett (1979) and Schmidt et al., (1983) also contained useful information that was included in the draft EIS. However, they were cited as being in the larger document. They are in USDOI, BLM (1978a) and Schmidt, McMillian, and Gallaway (1989). The Parametrix (1996) citation was inadvertently omitted from the draft EIS bibliography; it has been added to the final bibliography.

1658-045
Most of the literature cited in the draft EIS refers to this species as Arctic char. Because the majority of the EIS readers are not systematists, authors continue to use long-established and familiar names such as Arctic char. Nevertheless, the name change has been noted in the text.

1658-046
The illustration referenced is an approximation of total catch for individual species through time. Details associated with these catches were not needed for this approximation. It is unclear what is meant by "valid interannual comparisons," because the number of commercially harvested fish in the arctic region often is uncertain. The number of fish commercially harvested can overlap with those harvested in the subsistence fishery. More valid comparisons of the commercial fishery in this region would seem highly unlikely, as long as this condition persists.

1658-047
Please see Response 1658-044. Adding suggested information (age distribution, age at length, age at sexual maturity, etc.) for the many species covered in the text is beyond the scope of the draft EIS. Such parameters may be used someday to evaluate fish populations within the NPR-A. However, that level of detail is not necessary for this EIS. It would also hinder a basic understanding of fishery resources of the area for everyone except fishery specialists.

1658-048
The text has been revised to note that not all species of juvenile fish move into brackish water with adults.

1658-049
As suggested, the text has been revised and credits the original researchers.

1658-050
As suggested, the text has been revised to include a discussion of dietary overlap between fish and marine birds.

1658-051
Please see Response 1658-044. Detailed knowledge is limited for freshwater species in or near the NPR-A. However, sufficient information was available for this EIS. Regarding the scientific basis of the discussion, the draft EIS acknowledges that many of the studies cited concerning arctic fish were conducted outside of the NPR-A. The primary source of information on the topic concerning fish resources within the northeastern NPR-A was a paper by Bendock and Burr (1984).

1658-052
The commercial-fishery discussion was based on an annual management report for the Yukon area (State of Alaska, Dept. of Fish and Game, 1977; please see the EIS Bibliography). The table referenced in that document is on page 260. As illustrated in the EIS, it covers 1964 through 1996. During the time it was written, there was no other current source of information available.

1658-053
The information in Section III.C.3.b(3)(g) is based on the most current data available and it has been revised to include comments based on the draft EIS.

1658-054
The amount of activity each year is variable; see Tables IVA.1.a-1 and IV.A.1.b-2 through b-7.

1658-055
Although polar bears show considerable tolerance to seismic activity beyond 100 to 1,000 m, their sensitivity to disturbances near dens varies with the season. Bears are more likely to abandon dens during the fall, when they first enter them, than later in winter (Amstrup, 1993).

1658-056
In response to this comment, the text in Section IV.c.9.a has been revised.

1658-057
Caribou of the Teshekpuk Lake Herd probably have not been exposed to road traffic disturbance or other oil-development facilities on their winter range. This is because there are no extensive road system, or oil development in the NPR-A or in western Alaska south to the Seward Peninsula that encompasses their winter range. Thus, they have not been exposed to these activities. Most of the Central Arctic Herd caribou

are not exposed to oil development 8 to 9 months of the year on their winter range far south of the oil fields. Caribou probably rehabituate to the vehicle traffic on oil field roads each spring and summer. Cronin et al., (1994) state that caribou habituate to oil field structures, but they are slow to habituate to human and vehicular traffic—which is the main concern in the Teshepuk Lake area. To habituate, the animals must be exposed to traffic on a regular basis—more of a seasonal basis like most of the Central Arctic Herd's exposure to development. Cronin et al., (1994) speculate that habituation to human and vehicular traffic can be enhanced by restrictions in traffic, and that is difficult during development/construction when oil companies are on a strict time schedule.

Further discussion in the DEIS on the effects of pipelines and roads on Central Arctic Herd movements in the Prudhoe Bay area would not be applicable to the Teshekpuk Lake area. The TLH caribou movements east and north of the lake are restricted by the lake and Krogru Inlet. The Central Arctic Herd movements are not restricted by any natural features on its calving and summer ranges.

1658-058
The functional loss of "summer" habitat has been changed to functional loss of "calving" habitat. The displacement of calving within 3 to 4 km of the Milne Point Road on the oil field represents a loss of calving habitat along this road. The sensitivity of calving-caribou to vehicular traffic on oil field roads has been verified by Pollard and Ballard (1993) and Lawhead (1997). The former are among authors of publications listed among British Petroleum comments. The situation on the calving range of the Teshekpuk Lake caribou is unique compared to other arctic herds for the following reasons:

1. Teshekpuk Lake caribou cows (that calve north of the lake) move through a narrow 6 mi-wide corridor between the Lake and Kogru Inlet (Fig. III.B.5.a-1). Other Arctic Slope caribou herds do not move through a narrow corridor between large water-bodies on the Arctic Slope to reach calving habitat.

2. If a road with vehicular traffic transects the corridor between oil fields or other facilities, calving cows would be exposed to this traffic during the time when they are most sensitive to a disturbance.

3. Exposure to vehicular traffic just before calving would divert the movements of the cows away from the calving habitat north of the lake. This was the major concern of the caribou biologists attending the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop (USDOI, BLM, 1997).

4. If calving cows are diverted from the corridor by vehicular traffic, they may no longer calve north of the lake; this would represent a functional loss of calving habitat for some of the population.

In regard to effects on caribou productivity, the DEIS states on page IV-C-26, 5th paragraph, "as of yet, there is no conclusive evidence that CAH caribou abundance (productivity) has been affected." But, the conclusion by Cronin et al., (1997) "on the differences in densities and movements between segments of the herd on the oil fields, and east of the fields may have contributed to the decline" has been added to Sections IV.B.9.a(2) (b) 1) and IV.G.9.a(1).

In regard to the increase in the Central Arctic Herd during the first 15 years of oil development, the DEIS recognizes this increase on page IV-C-26, 5th paragraph, "If oil development were affecting caribou abundance, the effect would likely show up when the herd is larger and close to environmental carrying capacity than when the herd was smaller."

In regard to mitigation, caribou biologists at the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop (USDOI, BLM, 1997) tried to formulate restrictions on vehicular traffic during the calving season in the migration corridor between Teshekpuk Lake and Kogru Inlet. However, the biologists concluded that any traffic during calving could divert caribou from migrating through the corridor.

1658-059
Please see Response 1658-058.

1658-060
In response to this comment, the text in Section IV.C.9. a has been changed.

1658-061
Regarding a decline in caribou abundance, effects on wolf abundance is only hypothetical. This effect is described as "potential."

1658-062
It is not known how much riparian habitat is likely to be affected by seismic activities. The acreage of the habitat potentially affected depends on industry's interest in the lease sale and the location(s) of seismic activities.

1658-063
The statements cited are not contradictory. Reynolds and LaPlant (1986) are referring to overall distribution. Urquhart (1973) and Jingfors and Lassen (1984) are referring to temporary local avoidance by muskoxen.

The word "vulnerable" (Sec. IV.C.9.a) has been changed to "exposed" to clarify the analysis.

1658-064
The text in Section IV.C.9.a has been changed in response to this comment.

1658-065
The BLM cannot reference conclusions on multiple sales (Sec. IV.C.9.a). The conclusions are the opinions of the analyst.

1658-066
Please refer to Section IV.C.10.b(1)(b). Reactions of bowhead whales to vessel traffic is discussed in that section. Vessel and barge traffic associated with the NPR-A planning area is likely to be very limited and likely to be confined to fairly direct routes between staging areas such as Prudhoe Bay, Oliktok Point, and staging areas in the planning area—probably well shoreward of the primary bowhead whale-migration corridor. Limited marine traffic, in addition to relatively minor temporary responses by bowheads to vessel traffic, would lead one to believe that any effects to bowheads as a result of barge or vessel traffic are likely to be minimal. For a more detailed discussion of the effects of vessel traffic on bowhead whales, please refer to Section IV.B.a.1 of the Beaufort Sea Sale 144 final EIS.

1658-067
The 4 km displacement occurred on the calving range of the Central Arctic Herd. The situation is different for the Teshekpuk Lake caribou herd compared to the CAH. For the following reasons:

1. The 4 km displacement of CAH caribou occurred along the north-south axis of the Milne Point Road.
2. Both the TLH and CAH caribou move north to calving areas from winter range in the south.
3. CAH caribou don't have to across the Milne Point Road to get to calving habitat, thus displacement is limited along the road.
4. Under Alternative E, TLH caribou would have to across a potential oil development road between facilities in the corridor between Teshekpuk Lake and Kogru Inlet to get to calving habitat north and east of the lake.
5. These water bodies (Teshekpuk Lake and Kogru Inlet) tend to act as geographic barriers to cow caribou movements north and east of the lake. Thus, TLH caribou movements funnel through this corridor between the lake and the inlet.

6. CAH caribou movements are not restricted by these types of geographic barriers.

Oil development between Teshekpuk Lake and Kogru Inlet could result in more than a 4 km displacement of calving activity.

Under a worst-case scenario for the Teshekpuk Lake caribou herd, vehicular traffic crossing the corridor between Teshekpuk Lake and Kogru Inlet could result in the displacement of calving north of Teshekpuk Lake. This could represent a sizable portion of their calving range. Assuming recent information on TLH caribou calving locations in Figure III. B. 5 .a-1 are representative of calving range use, there could be a reduction in calving over about 50 percent of the range. However, it is uncertain whether calving habitat is limiting for this caribou herd or for other herds.

Caribou biologists disagree whether CAH calving habitat limits the herd's productivity. This question may never be resolved because of environmental variables from year to year.

1658-068
A discussion of global climate change has been added at Section III.A.4.

1658-069
Section IV.K.9.a has been revised. Please see also Responses 1851-001 and 1673-017.

1658-070
The statement referenced in Section IV.B.8.a(1) suggests that habituation to potential disturbing factors is an attribute that could influence the nesting success of birds. The statement does not imply that all arctic-nesting species possess such an attribute. However, observers probably could recall situations suggesting that almost all species are capable of habituating to factors that humans consider potentially disturbing. No attempt was made to suggest the ease with which habituation might occur (i.e., in context "tendency" meant any potential for a species to habituate not "readily" habituate). Given the relatively sparse literature relevant to habituation of arctic-nesting species to potentially disturbing factors, BLM chose a conservative approach to the topic. The BLM does not feel that the potential for some species to habituate to potentially disturbing factors eliminates the necessity for buffers around goose-molting lakes as mandated by Stipulation 25 in the (draft EIS). This stipulation also would protect critical habitat features instead of removing potentially disturbing factors farther from individuals that could be disturbed. Section IV.B.8.a(1) has been revised.

1658-071
Extrapolating potential impacts between areas is not the best scientific procedure. However, the Lisburne study area is similar enough to the Northeast NPR-A that general impacts expected in the northeastern planning area are likely to be similar to those in similar habitats at Lisburne. No specific studies with this type of information are available for the northeastern NPR-A.

1658-072
The BLM has revised Section IV.B.8.a(2). We are uncertain which sentence was unclear. We hope we have corrected the error.

1658-073
Cyclic use of raptor nest sites is an interesting subtlety of avian breeding biology.

1658-074
Currently, there are no bird species for which an accurate recovery period from a one-time mortality event has been determined. Perhaps the brant is the only species for which comprehensive data exist that would allow this determination now. Data relative to distribution and abundance of other species are available, but the BLM lacks crucial elements that would allow population-recovery calculations. A conservative estimate of "more than two breeding seasons" with no defined upper limit is given in Section IV.G.8. The statement concerns recovery of goose and loon species from substantial cumulative effects, including oil spills. The intent is to suggest that some geese may be expected to recover quickly from losses; they seem to recover because of high fecundity. Other species experiencing lowered productivity, together with loons for which this is typical, may require a substantially longer period.

1658-075
Anderson and Weller (1996) predict that if global warming occurs, deciduous shrubs would increase in abundance replacing grasses and sedges, which are the primary forage of caribou cows during the calving season. It stands to reason that if grasses and sedges decline on the calving range, caribou productivity could be adversely affected. (Anderson and Weller, 1996) has been added to the EIS bibliography. A new section on Global Change, Section III.B.4. has been added to the EIS that explains in more detail potential adverse effects on caribou, muskoxen, and birds in the Arctic that may occur if significant climatic warming occurs.

1658-076
Please see Response FA19-001.

1658-077
The intent of this document is to present the spectrum of Inupiat views, concerns, and issues about important subsistence resources. The suggestion that population dynamics modeling be undertaken, at least of Arctic ciscoes, to evaluate the status of these populations is a good one; eventually, it could be referred to the Interagency Research and Monitoring Team for action.

1658-078
Statements concerning the expected effects of pad and road construction are summarized from a discussion of similar activities for Alternative B Section IV.C.7.b(1)(b). It is stated in the section that these effects would be expected in high density "spawning and overwintering habitat, or in access corridors used by migratory fish."

1658-079
Studies conclude that causeways do affect the movement of some migratory fish. These effects on migratory fish populations are probably minor. Also, see revisions to Section IV.F.7(b)(6).

1658-080
The text in Section IV.F.7.b has been revised to incorporate the suggested change.

1658-081
Because the document is not intended as a literary review, the BLM did not cite all relevant publications in the EIS format.

Alaska State Legislature

1659

State Capitol
Juneau AK
99801-1182

Official Business

March 12, 1998

Mr. Gene Terland, NPR-A Project Coordinator
Bureau of Land Management
Alaska State Office
222 West 7th Avenue
Anchorage, Alaska 99513

Mr. Terland,

We, the undersigned, support making available to oil and gas leasing substantial portions of the area within the Northeast Corner of NPR-A that is within 20 miles of the Barrow Arch. It is critical to the success of any development program in the NE Corner that as much access as possible be provided to land close to the Arch as it has the greatest potential for hydrocarbon discovery. We also support making substantial portions of the southwest third of the planning area available to oil and gas leasing.

Over the last 30 years there have been many technological and operational advances in the development of oil and gas resources and a significant increase in scientific and cultural understanding of the renewable natural resources of the arctic. We believe this will allow operators to meet the high standards Alaska and the nation have set for the protection of wildlife habitat and subsistence users in the planning area. We expect that these standards will provide for ongoing input from the affected subsistence users.

A preferred alternative that meets our concerns and these standards will provide for the highest and best use of the NE Corner of the NPR-A. Thank you for considering our comments.

Sincerely,

Representative John Davies	Senator Jim Duncan
Representative Eric Croft	Senator Al Adams
Representative Gene Kubina	Representative Allen Kemplen
Representative Ethan Berkowitz	Representative Kim Elton
Representative Carl Moses	Representative Reggie Joule
Representative Albert Kookesh	Representative Ben Grussendorf
Senator Georgianna Lincoln	Senator Lyman Hoffman

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1660

March 12, 1998

Mr. Gene Terland
Bureau of Land Management
Alaska State Office
222 West Seventh Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland:

In accordance with the rule-making process, I am pleased to submit the State of Alaska's comments on the Draft Integrated Activity Plan/Environmental Impact Statement (DEIS) of the Northeast National Petroleum Reserve-Alaska (NPR-A). The state strongly supports responsible oil and gas leasing in the NPR-A.

In developing this document, the state has initiated extensive consultations with all of the stakeholders and other parties interested in the NPR-A. Included in this consultation process were federal, state, and local government entities, industry, scientists, environmental organizations, and local communities and citizens. These consultatinns were undertaken as part of my Administration's resource management philosophy of "Doing it Right." Based on the three principles of sound science, prudent management, and meaningful public involvement, the State of Alaska believes that "Doing it Right" is key to successful and responsible oil and gas development in the NPR-A.

We recommend the entire planning area be available for leasing, with special consideration given to some crucial areas within. The state recommends the following proposal for these areas: 1) that leasing in the Critical Goose Molting Area to the north of Teshekpuk Lake be delayed; 2) that no surface entry be allowed in two critical Teshekpuk caribou migration corridors; and 3) that no surface entry be allowed in Teshekpuk Lake, and important subsistence hunting and fishing area for the Inupiat people. These three recommendations are part of the State of Alaska's preferred alternative to the Bureau of Land Management's (BLM) proposed alternatives. It is the state's position that no permanent federal classifications or withdrawals are necessary to ensure protection of the environment and wildlife resources in the NPR-A planning area.

The State of Alaska believes the petroleum resources in the NPR-A are of great potential benefit to the Nation. Through increasing domestic production, decreasing America's dependence on foreign oil, increasing federal revenues, and increasing jobs, petroleum development in the NPR-A is an essential element to the future energy security of the United States.

When making a decision on the preferred leasing alternative for the NPR-A, it is important to keep in mind the fact that only certain regions of the planning area are likely to contain economically viable petroleum deposits. These areas of high prospectivity are key to successful development in the NPR-A. And it is in these very areas that the State of Alaska has redoubled its efforts to "Do it Right" in order to ensure environmental protection while allowing resource development.

The State of Alaska recommends the Record of Decision be completed in a timely manner and the decision to hold a lease sale follow soon after. We would like to thank the BLM for the time and opportunity to comment on the DEIS.

Sincerely,

Tony Knowles
Governor

Executive Summary
State of Alaska Comments on Draft Environmental Impact Statement
Regarding Renewed Oil and Gas Leasing
in the National Petroleum Reserve-Alaska

March 12, 1998

Doing Development Right in the NPR-A

The State of Alaska supports resumption of leasing in the National Petroleum Reserve - Alaska (NPR-A) and favors leasing the entire area under study. The Knowles Administration strongly believes the oil beneath the NPR-A can be developed in a responsible way that provides fuel and jobs for America, while protecting the environment and wildlife that depend on it. This document represents a summary of the State of Alaska's recommendations to the Secretary of the Interior on how this can be accomplished through the Environmental Impact Statement and lease sale processes.

Nearly three decades of oil development experience give Alaskans the expertise to extract the hundreds of millions of barrels of oil believed to be beneath the NPR-A in a manner consistent with the National Petroleum Reserve Production Act of 1976. That Act states that development must occur in a manner that "will ensure maximum protection of such surface values to the extent consistent with the requirements of this Act for exploration of the reserve."

The State of Alaska subscribes to a three-part "doing development right" philosophy. These principles - sound science, prudent management, and meaningful public involvement - are key to successful and responsible oil and gas development in the NPR-A. *Doing it Right* is the philosophy and policy direction developed by the Knowles Administration and one of the guiding principles for the State of Alaska's comments on the National Petroleum Reserve of Alaska (NPR-A) Draft EIS.

Since the first test well was drilled in the NPR-A in 1949, there have been significant advances in scientific knowledge and technology concerning development in Arctic ecosystems. These improvements have reduced the cost of oil production and have significantly reduced the environmental impact and footprint associated with oil and gas operations. Our goal is to ensure that Alaska's North Slope oil, including reserves in the NPR-A, are explored and produced in an environmentally safe manner.

Preferred Alternative

The State's alternative to the EIS, depicted in the attached map, recommends that the entire planning area - 19 percent of the total NPR-A - be available for leasing. However, we believe that there are some areas within the planning area, because of their important surface resources and subsistence uses, that deserve special attention, including the high-density goose molting area northeast of Teshekpuk Lake, Teshekpuk Lake itself, caribou migration and calving corridors northwest and east of Teshekpuk Lake, and the main stem of Fish Creek.

The State recommends the following for these areas:

1) Leasing in the Goose Molting Management Area to the north of Teshekpuk Lake be delayed and that no surface facilities be allowed in this area;
2) No (or limited) surface facilities be allowed in two critical Teshekpuk caribou migration and calving corridors located within the Caribou Management Area (CMA); and
3) No surface facilities be allowed in Teshekpuk Lake and within a 3-mile buffer along the main stem of Fish Creek, two important subsistence hunting and fishing areas for the Inupiat people.

The State also supports protection of important fish, wildlife, and subsistence values in the Colville River corridor and is prepared to participate in an independent, joint management planning effort with other adjoining landowners. The State believes no permanent federal classifications or withdrawals are necessary to ensure adequate protection of the environment and wildlife resources in the NPR-A planning area.

The State of Alaska recommends that an on-going and extensive research and monitoring program be designed and implemented by a federal, state, NSB, and industry research and monitoring team, in cooperation with the Subsistence Advisory Panel.

Oil Prospects in NPR-A

The Alpine Field just to the east of NPR-A is a newly discovered giant oil accumulation containing about 365 million barrels of high-quality economically recoverable reserves of oil. This discovery has focused national attention on the possibility of renewed leasing in the NPR-A because of its large size and proximal location. However, it is also the particular rock formation containing the Alpine oil deposit that has generated so much excitement from petroleum geoscientists.

The oil-bearing formation was previously unknown, and now, having been revealed at Alpine Field, is projected as a favorable exploration target area trending generally westward into the NPR-A planning area.

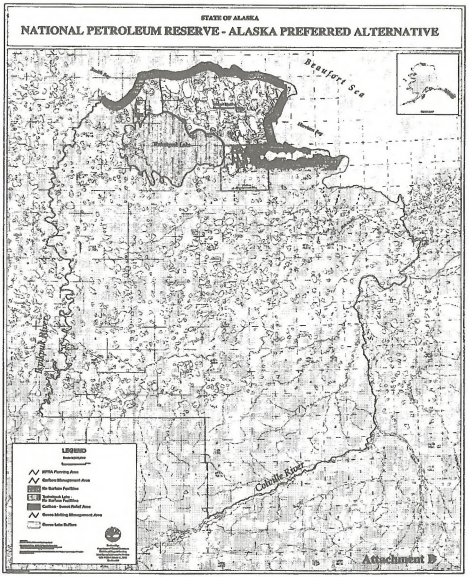
Benefits to the Nation

While the State of Alaska has a clear interest in the jobs and revenues associated with potential development in the NPR-A, oil development in this area can play a major and positive role in addressing important national and international issues, as well.

A reliable oil and gas leasing program in the NPR-A that results in commercial production would benefit the nation by: 1) providing the federal government revenues from bonus bids, taxes, and royalties; 2) reducing the nation's dependence on foreign oil; 3) lessening the trade deficit; 4) increasing jobs for Americans; and 5) maintaining the viability of TAPS, an important national asset.

The State of Alaska's comments and preferred alternative show that the federal government can undertake a project of this importance to the security of the nation and still balance the interests of the environment, industry, indigenous peoples, and state and local governments.

The State of Alaska believes the alternative proposed in Section II, considered within the framework of the EIS process instituted by the Department of the Interior, is a showcase of the NEPA. The level of cooperation between federal, state, and local government entities exemplifies how the NEPA can and should work. The Secretary of the Interior can and should make available for leasing this portion of the NPR-A while still protecting the valuable surface resources of the area, for the benefit of all Americans.



State of Alaska Comments on National Petroleum Reserve – Alaska Draft Integrated Activity Plan / Environmental Impact Statement

March 12, 1998

Submitted by:
Governor Tony Knowles

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Part I

I. Introduction

The State of Alaska supports resumption of leasing in the National Petroleum Reserve - Alaska (NPR-A) because the Knowles Administration strongly believes that the oil beneath the NPR-A can be developed in a responsible way that provides fuel and jobs for America, and protects the environment and wildlife that depend on it.

Nearly three decades of oil development experience give Alaskans the expertise to extract the hundreds of millions of barrels of oil believed to be beneath the NPR-A in a manner consistent with the National Petroleum Reserve Production Act of 1976. That Act states that development must occur in a manner that "will ensure maximum protection of such surface values to the extent consistent with the requirements of this Act for exploration of the reserve."

The State's alternative to the Draft Environmental Impact Statement (EIS) recommends that the entire study area (19 percent of the total NPR-A) be available for leasing.

However, we believe that there are some crucial areas within the study area that deserve special attention. The State recommends the following proposal for these areas: 1) that leasing in the Goose Molting Management Area to the north of Teshekpuk Lake be delayed; 2) that no surface entry be allowed in two critical Teshekpuk caribou migration corridors; 3) that no surface entry be allowed in Teshekpuk Lake; and 4) that no surface entry be allowed within a 3-mile corridor on both sides of the main stem of Fish Creek (as defined by the North Slope Borough (NSB)) with the exception of essential pipelines and roads. Both Teshekpuk Lake and Fish Creek are important subsistence hunting and fishing areas for the Inupiat people. The State of Alaska developed its preferred alternative based upon careful analysis of wildlife and habitat values, subsistence needs, economic and social progress and the use of applied technology advances. In the opinion of the State, no permanent federal classifications or withdrawals are necessary to ensure adequate protection of the environment and wildlife resources in the NPR-A planning area.

The State of Alaska subscribes to a three-part "doing development right" philosophy. These principles - sound science, prudent management, and meaningful public involvement - are key to successful and responsible oil and gas development in the NPR-A. Since the first test well was drilled in the NPR-A in 1949, there have been significant advances in scientific knowledge and technology concerning development in Arctic ecosystems.

These advances mean that America's energy sources can be developed in a way that protects the environment, while ensuring the quality of life for Americans. We no longer

must choose between development and preservation. Right now, at the edge of a new millennium, we have an opportunity that has eluded past generations – we can do it right. *Doing it Right* is the philosophy and policy direction developed by the Knowles Administration and one of the guiding principles for the State of Alaska's comments on the National Petroleum Reserve of Alaska (NPR-A) Draft Environmental Impact Statement (EIS). It is founded on the belief that resource management must be done "right," or not at all. *Doing it Right* is a comprehensive inter-disciplinary approach to resource management that ensures continued use, enjoyment, and sustainability of our natural resources for present and future generations. It means working with communities and citizens to ensure stewardship of Alaska's natural resources while protecting air, water, wildlife, and habitat. It means protecting traditional practices and cultural values, such as subsistence harvest of fish and game resources, which is an essential part of the culture and economy of the North Slope's Inupiat people. It means consulting with rural governments and communities, to assure their involvement in decisions that affect traditional subsistence uses and resources, including important stakeholders such as the people of the Yukon and Kuskokwim delta who rely upon certain Teshekpuk geese to meet their subsistence needs. It means providing well-paying jobs for local people, contracts for local businesses, ensuring decisions are community-based, and giving communities the opportunity to participate and benefit at all levels. It means challenging and partnering with industry as stewards to go beyond compliance. *Doing it Right* has three specific components:

- *Sound science* - bringing to bear the latest and best scientific information about the resources to bear including the best technologies and local knowledge;
- *Prudent management* - a) ensuring conservation and sustainability, b) relying on resident businesses and workers, and c) including field monitoring and verification to assure quality information and adaptive management, prior to, during and following development; and
- *Responsive, meaningful public involvement* - including stakeholders, communities, and citizens in ongoing public review.

Today, Alaska is developing the world's safest and most advanced oil exploration, production, and transportation system and we are continually working to make it even safer and better. Numerous technological advancements have been made over the last two decades of oil development on Alaska's North Slope. The trans-Alaska oil pipeline has undergone an intensive management review and upgrade in recent years and the most sophisticated technology is being developed for tanker safety. These improvements have reduced the cost of oil production and have significantly reduced the environmental impact and footprint associated with oil and gas operations. Our goal is to ensure that Alaska's North Slope oil, including reserves in the NPR-A, are explored and produced in an environmentally safe manner.

With careful planning and appropriate lease and permit stipulations, healthy populations of caribou, geese, and other wildlife can co-exist with oil development in the NPR-A. This includes protection of resources to ensure the continuation of traditional cultural and subsistence practices.

II. Legislative History

The legislative history of the NPR-A illustrates Congress' intent to create and maintain a reserve in which petroleum development can take place, while maintaining stringent standards of environmental protection. That history shows that while protection of the NPR-A's unique environment is an important goal, Congress intended that it not be the exclusive goal for management of the NPR-A. Rather, Congress intended that environmental protection take place in the context of oil and gas exploration and development. 001

The land that makes up the NPR-A was designated in 1923 by Executive Order 3797-A issued by President Warren G. Harding, which withdrew the area from the Mineral Leasing Act and created the Naval Petroleum Reserve No. 4. The Reserve was created to ensure that the Navy's ships would have adequate petroleum supplies during times of war. H.R. Rep. No. 94-81 (1976). By the 1970's, the historical need for the Naval Petroleum Reserve had diminished; however, the nation found itself in an energy crisis.

Partly in response to that crisis, in 1976 Congress passed the Naval Petroleum Reserves Production Act, which re-named the Naval Petroleum Reserve the "National Petroleum Reserve in Alaska" (NPR-A), provided the Secretary of the Interior jurisdiction over the Reserve, and authorized exploration activities in the Reserve. 42 U.S.C. §§6502 - 504. Congress also directed that two studies be undertaken, to assess the best overall procedures for developing, producing, transporting and distributing the petroleum resources, and to conduct a comprehensive review of all non-petroleum resource values in the NPR-A. Pub. L. 94-258, Sec. 105; H.R. Conf. Rep. No. 94-942, sec. 105(a),(b) (1976).

After the conclusion of these studies, Congress plainly demonstrated its commitment to using the Reserve for petroleum production by passing legislation in 1980 allowing competitive leasing in the NPR-A. 42 U.S.C. § 6508. This law required "an expeditious program of competitive leasing of oil and gas" in the NPR-A, and included a provision addressing environmental concerns. This proviso required the Secretary to include restrictions "to mitigate reasonably foreseeable and significantly adverse effects on the surface resources" of the NPR-A. Id.

The laws that established the NPR-A and allowed competitive leasing of the area emphasized the goals of developing the petroleum resources within the Reserve, and environmental protection.

Although protection of the unique environment was to be given careful consideration, the history behind the laws makes clear that environmental protection was not intended to exclude development of the Reserve's petroleum resources. 001

This conclusion is bolstered by a review of the relevant committee reports. For example, the House Committee on Interior and Insular Affairs stated that the bill was intended to direct the Secretary to explore for oil and gas on the 22 million-acre Naval Petroleum Reserve No. 4 in Alaska, and to report his findings annually to Congress. H.R. Rep. No. 94-81 (1976). Moreover, the Committee believed there was an urgent national need for immediate action to produce more domestic oil and natural gas. Id. The Committee found "[i]t is vital to the national interest to assess the amount and location of potential oil and gas available in [the NPR-A]." Id. Congress viewed the NPR-A as an integral part of the program to increase domestic petroleum production and boost the nation's economy.

The record also reflects Congress' attempt to balance oil and gas development with protection of scenic, wildlife, and other surface values. Congress specifically provided that exploration within certain areas containing significant surface resources and values should be conducted so as to assure the "maximum protection" of such values, but only "to the extent consistent with the requirement of the Act for the exploration of the reserve." 42 U.S.C. §6504(b). The Conference Committee report stated that

> It is the intention of this provision to immediately authorize the Secretary to require that the exploration activities within these designated areas be conducted in a manner designed to minimize adverse impacts on the values that these areas contain. While 'maximum protection of such surface values' is not a prohibition of exploration-related activities within such areas, it is intended that such exploration operations will be conducted in a manner which will minimize the adverse impact on the environment.

H. R. Conf. Rep. No. 94-942 (1976).

This language is compelling evidence that Congress envisioned a balancing of uses of the NPR-A, and not a prohibition of oil and gas related activity. The protection of surface values was thus not intended to be the absolute goal.

This view was further manifested in the legislation that allowed leasing of and actual production from the NPR-A. The leasing program was to be "expeditious" and designed to promote development, allowing leasing of large tracts of up to 60,000 acres each, with ten-year primary terms. 42 U.S.C. § 6508.

The use of the NPR-A as a petroleum reserve was also a significant factor in Congress' consideration of the Alaska National Interest Lands Conservation Act (ANILCA). 16 U.S.C. 3101 et. seq. During the congressional debates preceding the 1980 enactment of mineral closures in the Arctic National Wildlife Range, the NPR-A was consistently recognized as an area reserved for potential petroleum development. 001

In conclusion, the legislative history of the NPR-A establishes that Congress envisioned that the Reserve serve the country's need for oil and gas exploration and development, while not neglecting scenic, wildlife and other resource values. Consistent with this purpose, Congress specifically provided that environmental conditions or restrictions should not prohibit oil and gas development. Accordingly, the State of Alaska's preferred alternative would carry out the manifest intent of Congress to realize the oil and gas potential of the NPR-A, while protecting its valuable surface resources.

III. Benefits to the Nation

With American domestic oil production in decline, this country is increasingly dependent on uncertain sources of foreign energy. For example in 1973, at the height of the energy crisis, the U.S. was dependent on foreign oil for only 36 percent of its needs. Today, imported crude oil has increased to 56 percent of the United States' total crude oil supply (USDOE/IEA-0109 (97/12) p.6). The U.S. Department of Energy forecasts that petroleum imports will grow to two-thirds of U.S. consumption by the year 2020 (USDOE/IEA-0383 (98) p. 67). With the growing U.S. reliance on foreign oil, much of it coming from unstable Middle Eastern sources, oil and gas development in the NPR-A is a critical element of national energy policy.

The State of Alaska supports the U.S. Department of Energy's continuing efforts to advance conservation, explore the use of alternative energy sources, and achieve higher efficiencies using conventional fossil fuels. Tax incentives for certain alternative energy applications and for encouraging enhanced efficiency are an integral part of our national energy policy and the first steps toward a future less dependent on diminishing fossil fuels.

Currently and for the foreseeable future, the U.S. has an energy policy that is geared largely to the continued use of fossil fuels for our primary energy needs. Oil provides 40 percent of the energy Americans consume and 97 percent of our transportation fuels (American Petroleum Institute, Facts About Oil, 1997). Although this policy has been subject to some criticism, the practicality of switching from such a cheap and abundant energy source, the higher associated costs, the timeframe, and the potential impacts to the overall economic health of the nation argue for a cautious approach. Resolving the problems inherent in fossil fuel consumption and/or converting to other sources will require long-term commitments and the need to phase in changes slowly. A viable oil and gas leasing program in the NPR-A can play a critical role in this transition.

There is a common misconception that new field development and further investment in currently producing fields negates the need for exploration in the NPR-A. In reality, despite the planned or possible development of six new fields on Alaska's North Slope, production is leveling off. The production decline in major North Slope fields is not being replaced by production from newly developed smaller fields. It is important to consider the following facts:

New field start-ups for the 1999-2003 timeframe include Alpine, Badami, Tarn, Northstar, and possibly Liberty. Cumulatively, these fields are expected to add 205,000 barrels per day of new oil production. Additionally, development of small satellite fields in the Prudhoe Bay field area and the "ramp-up" of heavy oil production from the West Sak zone (Kuparuk River and Milne Point fields) could add a total of 85,000 barrels of oil per day. This gives the possibility of a total of 290,000 barrels per day of new oil production in the next six years.

Despite these new developments, total North Slope production is not expected to grow. This is because these increases will not offset the decline from the much larger producing fields which make up the majority of Alaska's production, namely the supergiant Prudhoe Bay and Kuparuk River oil fields. Additionally, two other giant fields, Point McIntyre and Endicott have also begun to decline in production. Total daily North Slope field production has declined between 60,000 to 70,000 barrels during each of the last five years.

This pattern of new production not offsetting decline has been documented for the past 10 years. North Slope oil production has declined 40 percent from its peak of 2,200,000 barrels per day in 1988 to 1,300,000 barrels per day in 1997. During that 10-year period four new fields - Point McIntyre, Niakuk, North Prudhoe Bay, and West Beach - came on line, and several billion dollars worth of enhanced oil recovery projects were implemented in the Kuparuk and Prudhoe Bay fields. Without the future discovery of large new fields in areas such as the NPR-A, North Slope production is likely to decline to the detriment of the State, the (NSB), and the nation.

It is also important to understand that considerable lead-time is required in Arctic Alaska to take a commercial reserve from discovery to ultimate production. Undiscovered resources in areas like the NPR-A cannot be instantly tapped when some future need arises or the price of oil increases. It takes nearly 10 years to bring new production on line on the North Slope. The Badami field, discovered in 1990, is anticipated to begin production in 1999. The Alpine Field was discovered in 1994 and is scheduled to begin initial production in 2000, one of the fastest turnarounds from discovery to production ever. Final development drilling, however, will not be completed before 2004.

In addition the process of offering competitive leases combined with the pre-discovery exploration phase normally adds an additional two to five years that must be added to the overall planning horizon.

A. Revenue Projections

The federal treasury has collected an estimated $24 billion from Prudhoe Bay since the field went on-line in 1977. Between 1980 and 1985, the United States' government also collected an additional $8 billion in windfall-profit taxes from Prudhoe producers. The other producing North Slope fields, and the pipeline itself, have generated an estimated $5 billion for the federal treasury. Together, Alaska's North Slope oil fields and the Trans-Alaska pipeline have generated an estimated $37 billion for the federal treasury since 1977.

The anticipated contribution to the federal treasury from new, smaller Alaska fields (Badami, Alpine, etc.) is difficult to predict based on oil production and prices. For example, if oil averaged $20 a barrel over the life of the fields, the federal government would receive as much as $7.3 billion in addition to revenues from the Prudhoe Bay field. That's based on 1.5 billion barrels of recoverable oil in those fields.

The anticipated federal revenues from a 300 million-barrel field in the NPR-A would be $2.0 billion at an average oil price of $20 over the life of the project. A 500 million-barrel field in NPR-A would up the federal revenues to around $3.0 billion. NPR-A lease sale bonuses also could produce an additional $50 million to $500 million for the federal treasury, even after the State's revenues are deducted.

Industry interest in this geographic region remains high. The State's most recent northern lease sale was for offshore tracts with a 16 2/3 percent royalty. Although in the offshore and with an aggressive royalty term, more than 90 percent of the tracts sold, generating bonus bids of over $28 million to the State. With interest this high in offshore areas which are more expensive to explore and develop, the State expects even greater interest, and the resulting federal revenues, in the NPR-A.

B. Lessen the Trade Deficit

An added benefit of reducing U.S. dependency on foreign sources for energy is an accompanying reduction in the national trade deficit. Totaling more than $50 billion a year, the cost of foreign energy is more than 60 percent of our trade deficit, with imported oil being the largest contributing commodity. Domestic energy production can help offset the growing trade imbalance.

This deficit can be moderated only through aggressive programs of improving efficiency as well as increasing domestic crude production.

Less than 4 percent of the surplus oil from the North Slope of Alaska is exported. It is also important to note that at the present time less than 4 percent of North Slope oil is exported to markets in the Far East. Although crude oil exports contribute to the reduction of the nation's trade imbalance, export of North Slope oil is not likely to increase. The U.S. west coast remains the most attractive market for Alaska crude oil and will remain so as North Slope production declines. The production from the NPR-A will be for the domestic market, which will not only reduce our nation's dependency on foreign energy sources but will help to reduce our trade deficit.

C. Increased Jobs for the Nation

More than 1.5 million people are employed by the U.S. petroleum industry, with nearly 380,000 jobs based in the U.S. Although this number is only a fraction of the American work force, these jobs are high-skill, high-paying jobs, receiving more than 30 percent above the wage of the average U.S. worker. The Draft EIS estimates direct employment could peak between 2,200 and 4,200 jobs during the development phase, but sustainable employment during the production phase will be 700 to 1,400. One of the main companies working on the North Slope of Alaska is BP Exploration (Alaska) Inc. and in 1996, it achieved 84 percent Alaskan hire.

It's no secret Alaska's economy is largely dependent on natural resource development. The challenge is protecting our environment without compromising economic development and jobs. Alaskans have a vested interest in the success of an NPR-A leasing program. Currently, the State of Alaska receives approximately 80 percent of its revenues from oil development and will receive 50 percent of all bonuses, rentals and royalties generated from NPR-A leases. Local communities will receive a priority allocation of these revenues. Alaskans will see significant benefits from NPR-A development in direct employment for jobs in petroleum exploration, development, production, and related activities, as well as employment in oil support services and retail industries.

D. TAPS Summary

Commercial oil production from the NPR-A will help to extend the life of the Trans-Alaska Oil Pipeline System (TAPS) by keeping the daily throughput rate above the economic limit for a longer period of time. The fixed TAPS operating costs will be spread out over more barrels thus lowering the tariff for all barrels. In addition to extending the life of TAPS and increasing ultimate recovery from all producing fields, this tariff-lowering effect also increases state and federal taxes and royalties from all producing fields because taxes and royalties are based on netback oil prices that depend in part on the pipeline tariff rate.

Longer TAPS life will benefit existing oil fields on state, federal and private lands. More oil will be produced at a higher North Slope value per barrel. Likewise, a longer North Slope production window will promote more exploration and development on those same lands, including geophysical activities, leasing and exploratory wells. A longer TAPS life means that the TAPS owners are more likely to improve existing infrastructure, invest in new pipeline equipment and upgrades, and continue to improve operating practices. The TAPS line will remain a part of the tax base longer for the local communities along the corridor. Local refineries in Fairbanks and Valdez rely on oil from TAPS to meet many but not all in-state petroleum needs. TAPS is the vital link in that system. National security and the overall balance of trade are improved with the addition of more North Slope oil production, which in turn is shipped through TAPS.

There is no currently viable alternative to the TAPS line to export and market North Slope oil. If TAPS is shut down and abandoned, it would take another super giant North Slope field discovery to support building a brand new oil line. A discovery of this size is unlikely on the North Slope. Recent North Slope oil discoveries have been relatively remote, smaller to mid-sized fields and very small satellite fields adjacent to currently producing fields. In addition, a new line, if built, would charge a much higher initial per barrel tariff.

Alaskans helped pay for the TAPS line since the tariff is one of the deductions from the west coast Alaska North Slope oil price used to calculate State oil royalties and taxes (about 25 percent of the total tariff is the State's share). After some 20 years of TAPS operations, the tariff rate is finally starting to be reduced because most of the initial investments are almost fully depreciated. We, as a State, now have a responsibility to protect and best utilize our "paid for" pipeline.

E. Energy and the National Energy Strategy

On February 18, U.S. Energy Secretary Federico Pena announced the anticipated spring release of the Department of Energy's Comprehensive National Energy Strategy. The draft document includes the following goals for the nation in its energy consumption and use: 1) Ensuring the efficiency of the energy system; 2) Ensuring against energy disruptions; 3) Promoting energy production and use in ways that reflect human health and environmental values.

The first three goals of this Draft Comprehensive National Energy Strategy (DCNES) relate directly to the State of Alaska's support for the resumption of leasing in the NPR-A. The State of Alaska supports the Department of Energy's programs for advancing technology, improving efficiency and increasing the nation's use of alternative fuels as means for decreasing our dependency on oil.

However, with 40 percent of the total energy consumption in the United States and 97 percent of our transportation fuels based on oil, it is predicted that we will continue to be dependent upon oil as an energy source for the foreseeable future.

This means that in order to ensure against energy disruptions, as the second goal of the DCNES states, it is necessary to develop domestic sources now. The DCNES explicitly states that it is in the national interest to "first stop and then reverse the decline in domestic oil production" by 2005. The NPR-A can be a crucial part of this reversal.

The final, but perhaps most important goal of the DCNES, is "promoting energy production and use in ways that reflect human health and environmental values." As stated earlier, the State of Alaska is dedicated to *Doing it Right,* meaning that NPR-A development must be conducted in a way that ensures the protection of the air, water, wildlife, and habitat. In this way we can ensure a healthy environment and a healthy human population which depends upon that environment for its subsistence needs. This position is consistent with the goals of the Draft Comprehensive National Energy Strategy and the State's support of resumed leasing in the NPR-A.

IV. Stewardship of Natural Resources and Trust Responsibility to Alaska Natives

The State of Alaska recognizes the responsibilities of the Secretary of Interior as the steward of the natural resources of the U.S.. In addition, the State understands the Secretary of Interior's special trust responsibility to American Indians and Alaska Natives. The following section describes the natural and cultural resources, as well as the Alaska Native people that inhabit the NPR-A. It is the State's position that our preferred alternative as outlined in Section II fully protects the surface resources and the Inupiat way of life and assists the Secretary in meeting his stewardship and trust responsibilities to their fullest extent.

A. Teshekpuk Waterfowl and Other Birds

The Teshekpuk Lake watershed is one of the most productive, diverse, and unique wetland ecosystems on the North Slope and provides habitat for thousands of birds during the summer months. It provides feeding, breeding, nesting, molting, and/or staging habitat for multiple bird types including loons, swans (tundra), geese, ducks (including the threatened spectacled and Steller's eiders), shorebirds, seabirds, passerines, and raptors. Teshekpuk Lake is the largest lake on the North Slope, 315 square miles, and the centerpiece of this unique wetland ecosystem. It is characterized by a great diversity of habitat types including a 20-foot deep basin and a complex shoreline featuring bays, spits, lagoons, islands, beaches, and extensive shoal areas. Local people have traveled to Teshekpuk Lake for centuries to hunt and fish from camps, cabins, and subsistence use sites along the shoreline.

Two hundred lakes to the north and east of Teshekpuk Lake are the most significant molting habitat for brant and Canada geese on the North Slope. Geese have had strong fidelity to this region for molting (annual period of feather loss and re-growth) for hundreds of years. Deep, open thaw lakes, formed in the ancient past, provide a unique ecological system unlike any other. Geese feed on rich shoreline meadows, are protected from predators by the combination of water and thawing ice, and are close to coastal habitats for staging in the late summer. Predators are few in number and can easily be seen on the horizon far away. At present, the Teshekpuk area is isolated from human use and there is no recent history of hunting during the summer molting period.

Up to 22 percent of the Pacific flyway population of brant molt in this area each year (33,000 were counted one year). Eighty percent of the Pacific flyway brant population will migrate to this area at some point during their life. Up to 27,000 Canada geese and 28,000 molting greater white-fronted and snow geese also use the area each year. Large numbers of Teshekpuk's molting geese, primarily failed breeders and sub-adults, migrate from breeding colonies in the Yukon-Kuskokwim Delta (75 percent), Canada, and Siberia. Because of their international origin and their annual migration routes, management of this goose population is regulated by several international treaties and agreements and is important to hunters and viewers throughout North America and Mexico. The Teshekpuk brant population is especially important to subsistence hunters in Alaska's western, interior, North Slope, and Yukon-Kuskokwim regions.

Molting geese are present in the area from mid-June to mid-August and flightless for 30-40 days. The stress of the molt takes geese to their lowest body weights of the year. Brant are 30-35 percent below prime weight by late July. Geese must feed in excess of 20 hours per day to gain enough energy for their migration south. Molting geese, especially failed and non-breeders, are highly sensitive to human disturbance and react strongly to visual and noise events. They form large flocks, panic easily if threatened, and will swim miles to escape predators or perceived predators. Responding to predators burns valuable energy and reduces time available for feeding. Based on this information, biologists believe that wild, flightless geese, such as those near Teshekpuk Lake, will likely react more strongly to disturbance than those born and acclimated to oilfields in Prudhoe Bay.

B. Teshekpuk Lake Caribou Herd

The Teshekpuk Lake Caribou Herd (TLH) is one of four caribou herds (Porcupine Herd, Central Arctic Herd (CAH), TLH, and Western Arctic Herd (WAH)) that inhabit arctic Alaska. For the communities of Barrow, Atqasuk, and Nuiqsut, because of the numbers of caribou harvested each year for subsistence, the Teshekpuk herd is the most important herd on the North Slope. The herd is estimated at 25,000 animals. Although good information is lacking, biologists estimate that the TLH grew from about 3-4,000 in the late 1970's to nearly 27,000 by 1993. In 1995, the herd numbered just over 25,000.

Three arctic caribou herds (CAH, WAH, and TLH) use the NPR-A planning area, but only the TLH calves there. In the 1970's and possibly at other times in the past, calving occurred southwest of Teshekpuk Lake. Since about 1980, calving has been concentrated to the east and southeast of the lake. Biologists do not know specifically what makes this area preferable to others on the arctic coast but believe that it may relate directly to the lack of predation on caribou calves, particularly by wolves. By migrating north of the tree line, the TLH leave the range of the wolf packs that generally remain on the caribou winter range, in the mountain foothills, or along the tree line. The open arctic tundra near Teshekpuk Lake offers a variety of other benefits to calving cows, specifically avoidance of predator ambush, natural camouflage for newborns in snow-free patches of tundra, and high nutritional forage. Sequential spring migration, first by cows and later by bulls and the rest of the herd, is also believed to give cows a competitive advantage in their search for quality forage as the snow melts. During calving and post-calving periods (May 25-July 15), cow/calf groups are most sensitive to human disturbance.

The TLH is found primarily within the NPR-A with its summer range extending between Barrow and the Colville River. From July to mid-August, Teshekpuk caribou seek relief from insects along the coast from Kogru Inlet to Smith Bay and on sand dunes along the Ikpikpuk River and south of Teshekpuk Lake. Relief from insect harassment is critical to maintaining healthy caribou populations in the planning area because the harassment reduces foraging efficiency and increases physiological stress. Fall/spring migrations and winter distributions are highly variable. In some years, the TLH remains all year in the same areas used for calving and post-calving (east and southeast of Teshekpuk Lake). In other years, Teshekpuk caribou winter across the North Slope coastal plain from the Colville River to the Chukchi Sea, in the central Brooks Range, in the Selawik Basin/Seward Peninsula, or in some combination of these areas.

The Teshekpuk herd is vitally important to residents of several North Slope villages who hunt caribou from the herd in late summer and throughout winter whenever the herd remains on the slope. Harvest may reach as high as 2,500 (or 10 percent) in some years, a fairly high harvest rate according to biologists. Severe winter storms have sometimes resulted in local die-offs. Unlike the CAH, the TLH has not experienced substantial contact with oil and gas development. Potential displacement and its impacts on the health of the TLH is an extremely important issue to local subsistence hunters, especially Nuiqsut which are the most dependent and consume the largest percentage of annual take from the Teshekpuk herd. Given the lack of human disturbance and development in the Teshekpuk area to date, very little information exists specific to population status, trends, distribution, or human use of most mammalian species in the planning area, including the TLH. Information that does exist regarding subsistence harvest patterns is outdated. Significant additional research about the TLH and the natural environment upon which it depends, particularly for calving, is essential to minimizing the impacts of potential oil and gas exploration and development in the region.

C. Fish Resources

The lakes, streams, and rivers found in the NPR-A Northeast Planning Area contain the most diverse assemblage of fish found on the North Slope of Alaska. More than half of the 20 fish species found in the NPR-A spend at least part of their life cycle in the brackish waters of river deltas or in nearshore marine waters along the area's coastline. Members of the whitefish family, particularly the broad whitefish, least cisco, Arctic cisco, and Bering cisco, support important traditional subsistence fisheries in the Colville, Ikpikpuk, and Miguakiak rivers, Fish and Judy creeks, and in Teshekpuk Lake. Other fishes found in area waters that are used as a subsistence resource include Arctic grayling, burbot, Dolly Varden, and lake trout. Protection of these fishery resources, by ensuring that disturbance to spawning and overwintering areas is avoided and that access by fish to feeding areas from spawning and overwintering areas is maintained, is of paramount importance to the State.

D. Mammals

Very little information exists specific to population status, trends, distribution, or human use of most mammalian species other than caribou in the northeastern NPR-A. Studies of wolves, wolverines, and brown bears in the late 1970s and early 1980s concentrated on the calving grounds of the Western Arctic Caribou Herd, well outside the current study area. Wolves, wolverines, and brown bears occur throughout northeastern NPR-A but are more common in the southernmost part of the current study area, becoming scarce and widely dispersed on the northern coastal plain. Wolves and brown bears preferentially use major riparian systems where prey such as arctic ground squirrels and moose are most common. Brown bears may also opportunistically use areas with high abundance of microtine rodents on the coastal plain. Polar bears occur in generally low densities along the arctic coast during late summer and fall and also den at low densities in the northern part of the study area during winter. Red foxes are not particularly abundant, but are more common in the southern part of the study area. Arctic foxes occur throughout the area and occasionally become very abundant and economically important to local trappers in the northern part of the study area.

Moose occur year round in the Colville River Special Area. They are most abundant along the southern border of the current study area. Moose disperse farther north during summer and some move into smaller riparian systems as well as the main Colville floodplain. Other than the Colville, only the upper Ikpikpuk River is known to support wintering moose within the study area. Moose populations across the central and western North Slope recently crashed to about 20% of their levels during the mid-1980s. Causes for the decline are unknown, but probably include disease, increased predation, and poor nutrition (exacerbated by severe winter weather and/or excessive insect harassment in summer). Productivity and survival may have improved somewhat during the past year.

E. Colville River Resources

The State recognizes and supports protection of the many river values and surface resources in the Colville River corridor. The lower two-thirds of the Colville River supports the highest concentration of raptors, passerines (songbirds), and moose on Alaska's North Slope. More than half of the known peregrine, gyrfalcon, and rough-legged hawk territories along this reach are in the planning area. The Colville River provides the largest expanse of passerine habitat on the North Slope and an unsurpassed abundance and diversity of species. Thirteen passerine species, dependent on low and tall shrub vegetation, breed regularly in the Colville River. Seven of these species are neo-tropical migrants, meaning they spend a significant portion of the winter south of the U.S./Mexico border in the neotropics ("new world" tropics).

The Colville River between Umiat and Ocean Point, including 53 miles of State shorelands, contains the core North Slope breeding ground of the peregrine falcon. Scientists estimate that 100-150 breeding pairs of peregrines are found along the Colville River (Swen 1997). The most concentrated population of Arctic peregrine falcons on the North Slope is found in the Umiat to Ocean Point segment. The Colville peregrine population declined by 65 percent in the early 1970's. Arctic peregrine falcons were protected in 1970 under the 1969 Endangered Species Conservation Act and later, in 1975, were afforded greater protection under Endangered Species Act of 1973. In 1994, following federal changes in pesticide use regulations and a significant recovery, the sub-species, Arctic peregrine falcon, was removed from the Endangered Species list. The State of Alaska is committed to cooperative management actions that ensure the continued successful recovery of the peregrine falcon.

The Colville's riparian shrubs also provide important habitat for moose, snowshoe hare, and willow Ptarmigan, and the rare plant species *Potentilla stipularis*. Moose live year-round in the Colville River corridor and are most abundant along the southern border of the planning area.

In addition, the low bluffs near Ocean Point contain "the most productive Late Cretaceous dinosaur site in the circumarctic" (Gangloff, 1992). Within a 4 km stretch, over 4000 skeletal elements, including teeth, ossified tendons, and bones have been mapped in what is known as the Chandler formation. The State of Alaska recognizes the serious risk of degradation and unauthorized removal of this important paleontological site posed by erosion of the riverbank and uncontrolled access to the area.

F. Cultural Resources

The State of Alaska has long realized the importance and the non-renewable nature of cultural resources. To this end, those resources have been clearly protected on State land since 1974 (see A.S. 41.35).

Similarly, State oil and gas leases require under Stipulation 12 that an archaeological survey be conducted prior to any ground-disturbing activities. The State recommends that the Bureau of Land Management (BLM) adopt this standard for the NPR-A planning area. (See Section III. C. – Proposed New Stipulations.) This provides for both the oil companies and the State's full knowledge of any sites that may be located. They can then be avoided or mitigated appropriately, whichever is more economical. If the consultation process recommended by the State (see Section II.F.) is adopted, critical contact and consultation with the NSB and local villages will occur as soon as planning for a cultural resources inventory is initiated.

The State's preferred alternative, to be described in detail in Section II, is grounded in an abiding respect for the land, wildlife, and people who live in the NPR-A

G. Respect for Local People and the Traditional Subsistence Way of Life

The NPR-A planning area has been used by the Inupiat people for centuries and continues to be of great importance today, especially to residents of Atqasuk, Barrow, and Nuiqsut. Its significance is affirmed in part by the presence of many seasonal campsites and Native-named places. The planning area contains unique arctic habitat and hosts exceptional seasonal concentrations of wildlife resources. Many of these resources, including vast numbers of waterfowl, migrate to and from the planning area and are harvested by local residents there and in other areas. The TLH often spends the entire year within the planning area and is another important subsistence resource harvested by local residents. Other resources found within or near the planning area that contribute to the Inupiat subsistence economy include moose, fish, furbearers, marine mammals, and plants. There can be no question that borough residents will be most directly affected by a decision to renew leasing in the planning area.

The State of Alaska is committed to the protection of subsistence resources, the environment, subsistence access, and the traditional subsistence way of life of Alaskans in and near the NPR-A. Renewed oil and gas leasing in the planning area must be designed with appropriate protection for all resources and traditional uses in and near the planning area, including subsistence activities, Native allotments, cabins, campsites, historical and cultural sites, access routes, and other uses. The State has worked in close partnership with the NSB, Arctic Slope Regional Corporation (ASRC), and local villages to identify a preferred alternative that gives us the benefits of oil and gas development and protects the fish and wildlife upon which local residents depend for their subsistence needs. This partnership is an extension of State collaboration with the Inupiat people in addressing other important resource management planning issues on the North Slope involving caribou and muskox.

The State of Alaska supports the North Slope regional and village Alaska Native Claims Settlement Act (ANCSA) corporations' efforts to receive their land entitlements.

The State recognizes that the land use patterns of the Inupiat residents of the North Slope are very extensive and reach well beyond the study area of the NPR-A. Because of this, the State recommends that the concerns raised by the NSB regarding cabins, land exchanges, and other land uses and ownership should be addressed in consultation with the NSB, the ASRC, and village corporations, and can be accomplished outside of the EIS.

In addition, the State recommends that lands currently withdrawn and awaiting conveyance to the Kuukpik village corporation not be leased for oil and gas development as part of a potential lease sale in the planning area. Outstanding issues regarding Kuukpik's additional land entitlements should be addressed and resolved by BLM prior to leasing areas selected by the village corporation.

The economic opportunities for the Inupiat people with the opening of the NPR-A to oil development could be substantial. The companies presently operating on the North Slope have made a commitment to local and Native hire and training programs. One industry source estimates that in 1997, North Slope oil and gas operators and contractors employed Alaska Natives for approximately one million man-hours, or about 500 full-time equivalent positions. The NSB receives significant economic benefits from North Slope oil development in the form of increased property taxes that pay for education, public safety, and health care services and facilities. The Draft EIS estimates the NSB will receive from $6 to $12 million per year during production. In the face of declining revenues from the Prudhoe, Kuparuk, Endicott and Lisburne oil fields, Alaska must look to new oil exploration and development to secure a positive economic future for its families. Prospects for the discovery of commercial reservoirs in the NPR-A are good and if developed will help Alaska secure this future.

H. National Environmental Policy Act

The State commends BLM for its commitment to an EIS process that has fully integrated State and local participation. The cooperation between the federal and state government and the NSB on this project exemplifies how the National Environmental Policy Act (NEPA) can and should work. State resource professionals worked effectively through our State EIS liaison to ensure consideration of State issues as the Draft EIS was prepared. This early participation by the State provided an opportunity to integrate NEPA requirements with State review procedures and to eliminate duplication – two objectives outlined in the Council on Environmental Quality regulations. The NPR-A EIS process provides an excellent model for future cooperation between federal, State, and local agencies during NEPA reviews. If in fact the EIS is successfully completed within 20 months, it will demonstrate that NEPA can work in a way that 1) is well coordinated among federal, State and local entities; 2) provides a thorough and well thought out analysis; 3) is completed in an expeditious manner.

V. Oilfield Potential, Technology, and Practice

A. Oil and Gas Prospects

The Alpine Field is a newly discovered giant oil accumulation containing economically recoverable reserves of about 365 million barrels of high-quality oil. It is being developed from two small production pads connected by a combination road/airstrip along the Colville River adjacent to the NPR-A. This new discovery has focused national attention on the possibility of renewed leasing in the NPR-A because of its large size and proximal location. However, it is also the particular rock formation containing the Alpine oil deposit that has generated so much excitement from petroleum geoscientists. The oil-bearing formation was previously unknown, and now, having been revealed at Alpine Field, is projected as a favorable exploration target area trending generally westward into the NPR-A planning area.

The State of Alaska is pleased with the Department of Interior's recognition of this important new geologic trend, and its timely work in producing the Integrated Activity Plan/Draft EIS for the eastern planning area. The State of Alaska believes that the proper approach to exploring previously known and new prospects within the NPR-A is to start with competitive leasing in the east (the current planning area). After that, planned sequential competitive offerings further to the west in the more remote regions of the reserve should be considered.

In addition to the new discovery at Alpine Field, other factors support re-opening the NPR-A to competitive leasing. These factors include:

1. Large area with a low density of well and seismic control;
2. No leasing in the past 13 years;
3. Good potential for large stratigraphic oil and gas accumulations;
4. The presence of many known non-commercial oil and gas accumulations and shows (indicating that the necessary geologic elements of trap, source, reservoir, and timing are all present);
5. Exploration, development and production technology, as well as environmental protection and monitoring, has greatly improved since the last NPR-A exploration in the 1980's; and
6. The oil industry has indicated a high level of interest in leasing and exploring tracts in the planning area, and has already spent millions of dollars conducting new seismic surveys (including 3D seismic) over parts of the area.

Geoscientists within the oil industry, State of Alaska, and Department of Interior agree that the NPR-A planning area holds some very interesting exploration trends and prospects.

The northernmost part of the planning area is underlain by the Barrow Arch, a broad structural flexure of subsurface rock formations that is one of the most prolific oil and gas producing geologic systems in North America. The Beaufortian Sequence of rocks ranges in age from about 190 million to 110 million years (early Jurassic through early Cretaceous) and records a period when the oceanic Canada Basin (north of Alaska) was being rifted open. The rocks deposited as part of this rifting episode are the most likely reservoirs for commercial oil deposits in the planning area. The Kuparuk Formation, its equivalents, and underlying sandstones within the Kingak Shale (Alpine, Nuiqsut, and Nechelik sandstones) are the most prospective reservoir rocks, all having demonstrated potential from the numerous oil discoveries made on State lands adjoining the eastern NPR-A boundary.

Other trends and plays also exhibit considerable prospects for new oil and gas discoveries. Of particular interest are the Ellesmerian reservoirs of the prolific oil producing rocks of the Triassic Ivashak Formation, with reserves of over 12 billion barrels at the Prudhoe Bay Field. In addition, some of the younger rocks of the Brookian Sequence represent by deep marine deposition of submarine fan complexes (turbidites). Where sand-rich, these potential targets can develop excellent reservoir characteristics and are known to be oil-bearing on adjacent state lands. In the Draft EIS the researchers identify no less than fourteen geologic plays for the planning area with the potential to contain oil and gas deposits.

The 1980 United States Geological Survey (USGS) NPR-A assessment estimated oil in place in the NPR-A between 820 million and 15.4 billion barrels. The mean estimate was 6.0 billion barrels. The more recent work by federal geoscientists is in the Draft EIS where they specifically assess just the resource potential of the eastern planning area, not the entire reserve. This assessment found that the conventionally recoverable resources could range from 1.832 billion barrels to 4.732 billion barrels, with a risked mean estimate of 3.070 billion barrels. State researchers agree that the geologic evidence justifies these impressive estimates.

Lack of existing oil and gas transportation infrastructure, remoteness, and fragile arctic ecosystems are the challenges we face in the NPR-A. These challenges are neither unique nor insurmountable given modern drilling and development technology and effective lease and permit stipulations. The roadless oilfield development underway at Alpine suggests what the future facilities and infrastructure in the NPR-A might look like.

B. Best Available Oilfield Technologies and Practices

Numerous technological advancements have been made over the last two decades of oil development on Alaska's North Slope.

These improvements have reduced the cost of oil production and the environmental impact and footprint associated with oil and gas operations. Alaska's success represents the benefit of a valuable partnership we continue to have with citizens and industry on important resource issues.

Exploration Techniques

The application of modern exploration techniques, a better understanding of northern Alaska geology and North Slope cost containment efforts should beneficially impact a new round of NPR-A exploration. Seismic sequence analysis (sequence stratigraphy), amplitude analysis, advanced depositional models, and 3-D seismic surveys should help delineate new prospects and reduce drilling costs. On State lands in Alaska, exploration activities are conducted almost exclusively during the winter months when geese and other birds are not present and caribou are widely dispersed or not present.

Roadless Development

New satellite oil fields such as Badami, which is 25 miles from the existing infrastructure, are being developed without the use of a permanent access road. Temporary winter roads, constructed of snow and ice, disappear with the thaw yet enable industry to construct pipelines connecting the production facilities with existing infrastructure and oil processing and transportation systems. This decreases gravel needs, avoids alteration of ground vegetation, eliminates miles of wetland fill, avoids road crossings of streams and rivers and reduces disturbance of wildlife species.

Directional Drilling

Directional drilling or extended reach drilling has changed how industry taps distant oil accumulations in Alaska and around the world. Directional drilling allows access to oil in a large area from a single pad. Extended reach refers to the horizontal distance, compared with traditional vertical drilling, from the top of the wellbore to the underground oil pool. Depending upon the specific geology of an area, oil can be accessed up to 4 miles away from the surface pad, thus reducing the number of drilling pads needed to develop subsurface deposits. This technology greatly reduces habitat impacts onshore and can allow tapping of offshore oil reservoirs from onshore. In lieu of a causeway structure, a gravel island, an offshore rig or a subsea pipeline, a field can be accessed from onshore and impacts to critical, nearshore fisheries habitat can be avoided. Facilities can be located to minimize risk to critical wildlife habitat areas.

Footprint Reduction

Oil production and exploration pad footprints have been reduced more than 80 percent over the past 20 years due to improved technology which allows much closer well head

spacing and smaller pads. Smaller pads are also possible because reserve pits are no longer used to store drilling wastes. Drilling muds and cuttings are now injected into deep wells within confined geologic formations. In addition, operators have improved drilling efficiency through acquisition and interpretation of advanced seismic data. This has resulted in better pad placement, fewer dry holes, and higher recoveries.

Concurrent Restoration of Gravel Mine Sites

Gravel used for construction of roads and pads is mined from sites on the North Slope. Gravel mines are sited to avoid important fish and wildlife habitats and are rehabilitated to provide opportunities for fish and wildlife enhancements. Site rehabilitation occurs concurrent with the mining itself. Rehabilitation and recycling old gravel pads is an impact-reducing option that could also be used.

Pollution Prevention and Waste Minimization

Alaska works in close partnership with the oil industry and support industries to recycle scrap metals, anti-freeze, drilling fluids and used batteries. North Slope operators and their contractors work together to implement an active field-wide pollution prevention program that includes materials inventory control, chemical substitution, and management review. Industry is continuously striving to improve routine waste procedures and is currently working to identify new techniques for reducing putrescible waste. In addition, vehicles are operated to avoid contamination of water and soil; for example every vehicle operator on the North Slope must place a drip pan under the engine when the vehicle is not in operation.

Leak Detection and Monitoring

Alyeska Pipeline Service Company leads the pipeline industry in leak detection capability. The new transient volume balance system is the best available technology for leak detection in the world. The system can detect whether a leak may be occurring and can identify the probable location. The Line Volume Balance system is also used to sense leaks by checking the oil volume entering and leaving the line. Deviation alarms are triggered when inappropriate variations in pressure, flow, and flow rate balance occur.

Smart Pigs

Pigs are mechanical devices that travel with oil flow through the pipeline. The new generation of so-called "smart pigs" can detect internal and external corrosion as well as survey the shape of the pipe. Advances in pig technology introduced in 1994 allow more accurate determination of pipeline integrity. Over 35 ultrasonic testing pigs have been run through the TAPS since start up.

Corrosion monitoring pigs currently run through TAPS annually. High-resolution ultrasonic testing pigs can detect loss of wall thickness down to a few thousandths of an inch. The present generation of smart pigs gives more complete and reliable data – a four-fold improvement above previous technology. This information can be used to prevent spills before they happen.

Fiber Optic Communications

Presently, as a safety measure, if communications are lost to any valve or pump station along the trans-Alaska pipeline for more than two minutes, the pipeline is shut down until communications can be re-established. A new, state-of-the-art, fiber optic transmission system, offering digital transmission of data, is presently under construction along the TAPS line. This new fiber optic upgrade will handle current and projected voice, video, and data needs, and will include a back-up satellite communication system. These communications improvements will ensure safer operation of the pipeline because of improved surveillance capabilities.

Tanker Safety

The trans-Alaska pipeline has undergone an intensive management review and upgrade in the last few years and the most sophisticated technology is being developed for tanker safety. Since the *Exxon-Valdez* oil spill, a number of safety improvements to reduce human error and improve vessel operation have been implemented in Prince William Sound. These include:

1) The Ship Escort Response Vessel System protects Prince William Sound with the largest spill response organization in the United States.

2) Installation of a new vessel tracking system operated by the U.S. Coast Guard that tracks every tanker transiting Prince William Sound.

3) The Prince William Sound Regional Citizens' Advisory Council, local communities and fishermen have significantly improved state and federal oversight by providing vigilant advice to the oil industry and government on improved spill prevention and response methods.

4) Commitment by industry to design and build two new, highly maneuverable 10,000 horsepower state of the art tractor tugs which will be the world's most powerful and technologically advanced tractor tugs and escort vessels. The first of these tugs will arrive in Valdez in early 1999.

5) Commitment by ARCO Alaska, Inc. to construct two double-hulled tankers for Prince William Sound, which are expected to be complete by the year 2000.

6) Stationing of the *Gulf Service*, a high-powered ocean rescue vessel, at the entrance to Prince William Sound since last spring.

7) Improved siting of the National Oceanic Atmospheric Administration weather monitoring station, enabling better weather reporting and decisions on weather closures.

8) Implementation of a Safety Management Program that improves shipboard procedures by minimizing mechanical and human failures.

9) Establishment of the Valdez Marine Operators Committee, a mariner's forum to monitor and evaluate tanker operations by providing continuous review and improvement of tanker operations. The committee has improved tanker transit procedures to:

- Establish clear, on-water operating zones for tankers approaching and transiting Valdez Narrows,
- Clarify escort vessel operator's duty to question and, if needed, aid in correcting any abnormal tanker operations,
- Increase on-water rescue training exercises for tug boat and tanker officers, and
- Provide additional crew members on the bridge of escort tugs when transiting the Valdez Narrows.

10) Creation of bridge simulators by shippers and Alyeska to jointly train tanker and tugboat officers and state licensed marine pilots under conditions which simulate Prince William Sound waters with tug and tanker interactions.

These improvements in tanker safety were possible because of the State of Alaska's partnership with the oil and gas industry and Prince William Sound communities.

VI. Conclusion

The Knowles Administration strongly believes that the oil beneath the NPR-A can be developed in a responsible way that not only provides fuel and jobs for America, but also protects the air, water, land, habitat, and the wildlife and people that depend on it. Oil and gas production conducted with care for the environment and wildlife in the NPR-A can yield great benefits for the nation. The State supports the resumption of leasing in the NPR-A designed in a way to protect the particularly important fish and wildlife values found in Teshekpuk Lake area and the Colville River corridor. This document represents the State of Alaska's recommendations to the Secretary of the Interior on how this can be accomplished through the EIS and lease sale processes.

While the State of Alaska has a clear interest in the jobs and revenues associated with potential development in the NPR-A, oil development in this area can play a major and positive role in addressing important national and international issues, as well. For instance, a reliable oil and gas leasing program in the NPR-A that results in commercial production would benefit the nation by: 1) providing the federal government revenues from bonus bids, taxes, and royalties; 2) reducing the nation's dependence on foreign oil; 3) lessening the trade deficit; 4) increasing jobs for Americans; and 5) maintaining the viability of TAPS, an important national asset.

The Knowles Administration believes development in NPR-A can be conducted in a manner that is consistent with the *Doing it Right* approach. In the process of creating this document, the State of Alaska followed the principles of sound science, prudent management, and responsive, meaningful public involvement. Incorporating the best scientific information available from biologist, geologists, marine scientists, social scientists, and petroleum engineers, the State has studied the surface resources and recommended a high level of protection for those resources. In addition, a viable land management program, including monitoring, continued scientific research, and the creation of a Subsistence Advisory Panel (see Section II.1) ensure that the principles of sound environmental management will be followed during the leasing, development, and production phases.

Sound science and technological advances allow oil exploration in ways not possible just a few years ago. Roadless development, directional drilling, reduction of footprint, fiber optic communications, smart pigs, and tanker safety programs contribute to the ability to develop the NPR-A while protecting wildlife and habitat. These aspects of the State of Alaska's comments and preferred alternative show that the federal government can undertake a project of this importance to the security of the nation and still balance the interests of the environment, industry, indigenous peoples, and State and local governments.

The state recommends that an on-going and extensive research and monitoring program be designed and implemented by a federal, state, NSB, and industry research and monitoring team, in cooperation with the Subsistence Advisory Panel. If monitoring identifies unacceptable displacement, disturbance, mortality or other resource impacts directly attributable to oil and gas activities, BLM should have a clear adaptive management strategy in place for review and modification of relevant permit stipulations with the goal of alleviating the source of the impact.

The State's alternative to the Draft EIS recommends that the entire study area (19 percent of the total NPR-A) be available for leasing.

However, we believe that there are some crucial areas within the study area that demand special attention.

The State recommends the following proposal for these areas: 1) that leasing in the Goose Molting Management Area (GMMA) to the north of Teshekpuk Lake be delayed; 2) that no surface entry be allowed in two critical Teshekpuk caribou migration corridors; and 3) that no surface entry be allowed in Teshekpuk Lake and within a 3-mile corridor on both sides of the main stem of Fish Creek (as defined by the NSB), important subsistence hunting and fishing areas for the Inupiat people. In the opinion of the State, no permanent federal classifications or withdrawals are necessary to ensure adequate protection of the environment and wildlife resources in the NPR-A planning area.

We believe that the State's alternative would allow the Secretary of the Interior to carryout his trust responsibility to Alaska Natives by protecting their subsistence resources and promoting economic development for all the residents of the North Slope. In addition, the State's alternative to the Draft EIS provides a level of protection for the surface resources consistent with the Secretary of the Interior's stewardship responsibility to those resources.

The State of Alaska believes the alternative proposed in Section II, considered within the framework of the EIS process instituted by the Department of the Interior, is a showcase of the NEPA. The level of cooperation between federal, state, and local government entities exemplifies how the NEPA can and should work. Through the NEPA process the State has been allowed to develop the position put forth in this document. The Secretary of the Interior can and should make the NPR-A planning area available for leasing while still protecting the valuable surface resources of the area for the benefit of all Americans.

Part II

I. Preferred Alternative

A. Resume Oil and Gas Leasing in NPR-A Planning Area

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For the reasons discussed above, the State of Alaska recommends a resumption of oil and gas leasing in the NPR-A planning area. Because of sensitive molting geese populations, concentrated caribou movement and calving corridors, and high subsistence hunting and fishing values in the Teshekpuk Lake region, the State proposes that leasing within the NPR-A planning area be conducted in phases. Under this phased scenario, most of the high potential oil and gas prospects would be available for leasing at a first sale to be held early next year. All areas other than those specifically delayed because of surface resource concerns would be available for oil and gas leasing immediately. The State's recommended approach is depicted in Attachments A and B.

The State recommends that leasing in the GMMA as depicted in Attachment A should be delayed until specific research, technology, consultation, and other conditions are satisfied. These specific conditions are described in Section B. The State also proposes that an area depicted in Attachment A as the Caribou Management Area (CMA) should be available for leasing with specific limitations on surface facilities and other activities. These restrictions are detailed in Section C. All stipulations identified in the Draft EIS including proposed modifications and additional stipulations proposed in Section III of these comments should apply to leasing activities in the planning area.

In Section III, the State proposes a number of technical and substantive changes in stipulations proposed in the Draft EIS. Goose molting buffers required in Stipulation 25 of the Draft EIS and limitations on surface facilities within key caribou movement corridors are critical elements of the State's preferred alternative. The State believes that these provisions, in combination with other Draft EIS stipulations (as amended in Section III), provide maximum protection for molting geese, caribou, and other surface resources in the Teshekpuk region consistent with the purposes of the NPR-A. These provisions in combination with an effective consultation process, one that requires participation by local communities and the NSB, will minimize potential displacement or disturbance of these valuable surface resources. Specific stipulations, e.g., 21, 26, 33, 34, and 35, will contribute significantly to this goal. The State recommends that the BLM adopt a number of additional stipulations, also outlined in Section III, that will provide greater protection for air and water quality, fish, and wildlife, improve spill prevention and response capability, and further minimize the human footprint on the NPR-A environment. (See Section III. C. - New Proposed Stipulations)

B. Goose Molting Management Area

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The State of Alaska recognizes the international significance, uniqueness, and sensitivity of high-density goose-molting lakes in the northeast portion of the NPR-A planning area and, as a consequence, believes that the 540 sq. mile (7.5 percent of the planning area) area northeast of Teshekpuk Lake, as depicted in Attachment A, should not be made available for oil and gas leasing until specific conditions have been satisfied. There is widely acknowledged scientific uncertainty regarding the potential impact of human disturbance on Teshekpuk geese, particularly molting geese, nonbrood-rearing geese, and geese that have been unexposed to significant human activity during molting. Appropriate research should be designed and carried out by a joint federal, state, NSB, and industry team (see Section G) to obtain additional scientific information. The research and monitoring team should take advantage of opportunities for experimental disturbance analysis in areas open to oil and gas leasing to the west and south of the GMMA.

Leasing should be delayed in the Goose Molting Management Area until conditions 1 through 5 below are met:

1. Goose and caribou disturbance studies, designed and implemented by a joint state, federal, NSB, and industry research and monitoring team, are conducted.

2. Technology has advanced and industry can demonstrate one of the following:

   - they can conduct a seasonal operation that includes shutdown for the summer molting season and can demonstrate that proposed oil and gas activities will not negatively impact molting geese behavior;
   - they can demonstrate, with the support of disturbance studies conducted under the auspices of the research and monitoring team along with advances in technology, that proposed oil and gas activities will not negatively impact molting geese behavior.

3. Industry can demonstrate successful operation of a remote oil field without road access to the established oil and gas infrastructure (e.g., Alpine).

4. The consultation process, described in Section F, is developed and successfully implemented in conjunction with an NPR-A exploration and development planning process.

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5. The Federal Aviation Administration (FAA) and BLM, in consultation with Alaska Department of Fish and Game (ADF&G) and U.S Fish and Wildlife Service (USF&WS), develop and implement appropriate helicopter planning and routing restrictions for this area to prevent disturbance during the critical goose molting period.

Finally, the State of Alaska recommends that no surface facilities be allowed within the GMMA.

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C. Teshekpuk Lake

As described in Section II, Teshekpuk Lake is the largest lake on the North Slope, the centerpiece of the Teshekpuk watershed, and has an extremely complex hydrodynamic system. The lake is extremely important to local communities and is widely used for cultural and subsistence activities. At the present time, extended reach drilling technology in the Arctic does not allow operators to access reserves underneath certain parts of the lake without drilling from within the lake itself. Drilling from within the lake raises spill concerns that to date have not been adequately resolved. Because of these concerns, the State of Alaska recommends that Teshekpuk Lake, as described in Attachment A, be made available for leasing with the caveat that no surface facilities be allowed on the lake itself. Lessees will be required to access subsurface resources from land surrounding the lake using extended reach drilling technology. No exceptions will be allowed to surface facility restrictions in Teshekpuk Lake in the absence of consultation with appropriate State and federal resource agencies, the NSB, and affected villages as described in Section F.

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D. Caribou Management Area

The State of Alaska recommends that BLM create a Caribou Management Area (CMA) to identify and provide increased protection for critical calving, post-calving, migration, and insect relief access corridors within the Teshekpuk Caribou Land Use Emphasis Area (LUEA). As mentioned in Section I.B., the TLH is vitally important to subsistence users from Nuiqsut, Barrow, and Atqasuk and is being harvested at a very high rate. Changes in herd population and distribution could significantly impact local subsistence harvest patterns. The State is particularly concerned about the potential impact of human development within the CMA on caribou cows and calves during the calving and post-calving periods. Pregnant caribou and caribou with calves have been observed to avoid habitat within 1.8 to 2.5 miles of existing oilfields during the calving and early post-calving periods. Aircraft traffic also can disturb pregnant caribou and caribou with calves.

The State proposes that leasing be renewed in the area east of Teshekpuk Lake and NW of Teshekpuk Lake (west of Goose Molting Management Area), the area referred to as the CMA.

The CMA is comprised of two movement corridors identified in Attachment A as crucial caribou land corridors ("A" and "B"). The CMA deserves special attention not only because of its high oil and gas potential but also because of its unique location and critical importance for migration, calving and access to insect relief points along the coastline and Kogru Inlet. The narrow area between the eastern shore of Teshekpuk Lake and Kogru Inlet (area "A" in Attachment A) is approximately 6-7 miles wide and a crucial choke point for caribou movement. A similar but smaller caribou movement choke point (depicted as area "B" in Attachment A) exists between the northwest shoreline of Teshekpuk Lake and a large lake immediately adjacent to the coastline. The topographic features of the area, large numbers of lakes and small amounts of dry land, create additional challenges for potential oil and gas development, particularly during calving and post-calving seasons when dry areas are densely populated with cows and calves.

Permanent surface facilities should be restricted in two designated areas within the CMA that are critical to caribou movement. To the extent they are consistent, stipulations proposed in the Draft EIS (as amended by the State) are also applicable. The following stipulations would be applied to oil and gas exploration and development activities in the CMA:

A. No Surface Facility Areas

1) Construction of permanent surface facilities within caribou movement corridor "A", east of Teshekpuk Lake, is prohibited. (See Attachment A) Permanent surface facilities include pads, rigs, platforms, gravel roads, airstrips, and pipelines. Exploration activities, including construction of ice roads, may occur from November 1, or until tundra travel conditions have been met, through April 15, with a 72-hour notice to shutdown thereafter.

Lessees are strongly encouraged to avoid siting of drilling facilities on the north side of Kogru Inlet. Restrictions on facility siting within the 2-mile insect relief corridor on the south side of Kogru Inlet should be flexible and allow for siting of drilling facilities designed to reach subsurface reserves beneath and to the north of Kogru Inlet. However, high use migration trails in a ½-mile band along the southern shoreline of Kogru Inlet should be avoided. Drilling facilities should be sited outside this shoreline trail area.

2) Construction of permanent surface facilities in caribou movement corridor "B", northwest of Teshekpuk Lake, is prohibited with the exception of pipelines. (See Attachment A) Pipelines will be sited parallel to existing caribou trails and as far away as practicable to avoid

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disruption of caribou migratory routes. Permanent surface facilities include pads, rigs, platforms, gravel roads, airstrips, and pipelines. Exploration activities, including construction of ice roads, may occur from November 1, or until tundra travel conditions have been met, through April 15, with a 72-hour notice to shutdown thereafter.

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B. General Provisions - Caribou Management Area

1) Pipelines will be sited parallel to existing caribou trails and as far away as practicable to avoid blockage of caribou migratory routes.

2) Outside areas "A" and "B", surface facilities shall be limited to the maximum extent practicable and located away from known caribou trails and calving areas.

3) Helicopter flights will be restricted during the calving and immediate post-calving period from May 20 through July 15 by careful flight planning and routing.

C. No exceptions will be allowed to surface facility restrictions in the CMA in the absence of consultation with appropriate State and federal resource agencies, the NSB, and affected villages as described in Section F.

D. Exceptions to surface facility restrictions in area "A" will be granted only after completion of an EIS and clear demonstration that the two-part, exception test (see Section III.A. Stipulations – General Comments) is satisfied.

E. Baseline studies will be conducted pursuant to Stipulation 24 (see Draft EIS). Caribou research and monitoring studies will be designed and conducted by a federal, state, NSB, and industry research and monitoring team after development begins to evaluate the effects of development on the Teshekpuk Lake caribou herd.

E. Fish Creek

006

The State of Alaska supports leasing in the Fish Creek area with the caveat that no surface facilities, except for essential pipeline and road crossings, be constructed within a 3-mile corridor on either side of the Fish Creek main stem centerline (as specifically described by the NSB in their comments.) The Fish Creek drainage is an extremely important subsistence use area for the village of Nuiqsut.

F. Consultation Process

007

The State strongly recommends that an expanded consultation process be developed and implemented as an integral part of all exploration and development planning within the NPR-A planning area. Consultation should begin with the lease sale and continue until the final remnants of oil and gas development are removed. The State recommends that a cooperative process be developed that ensures direct participation by the NSB, affected villages, and appropriate state and federal agencies in site-specific exploration and development decisions. The Alaska Village Council Presidents Waterfowl Conservation Committee should be consulted on decisions that relate to geese that migrate from the Yukon-Kuskokwim area to the GMMA northeast of Teshekpuk Lake.

The State supports the conflict resolution models used in Minerals Management Service (MMS) Lease Sale 170 and State Lease Sale 87. Consultation processes related to Alaska oil and gas development have evolved substantially in the last 20 years. BLM should take advantage of the positive strides made by both federal and state leasing agencies to date and develop a consultation and conflict resolution process for the NPR-A that integrates local voices and standards, traditional knowledge, and agency technical expertise into the exploration and development planning processes. The State is committed to active participation in BLM's efforts to develop and implement an effective consultation process.

G. Research, Monitoring, and Adaptive Management

008

Effective monitoring of human impacts associated with oil and gas exploration and development and the effectiveness of stipulations designed to protect surface resources and subsistence uses in the planning area is essential to responsible development of the NPR-A. The State of Alaska recommends that an on-going and extensive research and monitoring program be designed and implemented by a federal, state, NSB, and industry research and monitoring team, in cooperation with the Subsistence Advisory Panel.

The purpose of the program is to research and monitor fish and wildlife disturbance and displacement; impacts on traditional subsistence uses and resources, vegetation, air and water quality, and hydrology; effectiveness of stipulations; cumulative and secondary impacts; and other important surface resource concerns. The State supports development of an issue-based research and monitoring program with independent scientific review. The program should place a strong emphasis on publications, integration, and assessment. All technical plans and reports should be reviewed by the independent review body.

The team should oversee the completion of technical reports and provide information and recommendations on specific research and monitoring topics as appropriate during the consultation process. The research and monitoring team should develop monitoring plans that document and foster compliance with geese, caribou, and other stipulations.

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The plans should document the short-term and long-term effectiveness of the plan in meeting the objectives set forth in the Final EIS to protect fish, wildlife, and subsistence resources and uses. An adaptive management strategy should reflect interrelated levels of monitoring strategies for evaluating a) effectiveness of stipulations and b) trends in species abundance and distribution, changes in habitat quality and changes in emerging technology.

The program should build upon existing oil field research conducted on the North Slope and include:

- status and change of resource damage and resource displacement,
- the effects of air pollution on soils, water, and vegetation,
- the impacts of vehicle, helicopter, and fixed wing airplane traffic and other noise on nesting and molting birds and on pregnant caribou and caribou with calves,
- the impacts of permanent facilities on calving and migrating caribou and molting geese,
- the effects of development on subsistence resources and uses,
- the effects of development on air, soils and water quality, and
- the effectiveness of stipulations, including monitoring, to ensure compliance.

If monitoring identifies unacceptable displacement, disturbance, mortality or other resource impacts directly attributable to oil and gas activities, BLM should have a clear adaptive management strategy in place for review and modification of relevant permit stipulations with the goal of alleviating the source of the impact. Adaptive management is a fairly new term for an old concept. It is the ecosystem management counterpart to "learning from experience." All such concepts have two essential elements in common: 1) a feedback element which gathers and evaluates information about current performance (of an action or activity), and 2) an adjustment element which responds to feedback information by being able to alter future performance when needed. (See Bormann et al., Adaptive Ecosystem Management in the Pacific Northwest, 1994.)

Monitoring and evaluation play a central role in adaptive management. Some monitoring and evaluation activities are conducted to ensure appropriate implementation of standards and guidelines. Others are conducted to deal with uncertainties regarding effects of land management or oil and gas activities. This includes gathering additional information to reduce these uncertainties by determining whether the effects of various standards and guidelines are consistent with predictions, and also to validate key assumptions underlying various standards, stipulations, and guidelines and projected outcomes of management. Information gained through monitoring and evaluation will be used to adjust management direction in the future where warranted. Accordingly, monitoring and evaluation should be given a high priority for funding under the oil and gas leasing plan potentially authorized by the Final EIS.

The overall program should also include an oil and hazardous substance spill prevention and response technology research program that addresses issues such as shoreline cleanup of streams and ponds, disposal of spill cleanup materials, burning of spills, succession of plant species at spill sites, improved skimmers for open water and broken ice in fresh waters, improved tundra travel to access spill sites in the summer, and handling of wildlife in spill situations. 008

Team operations should be funded by the U.S. Department of Interior. Funding for research and monitoring projects themselves should be secured from a combination of sources including industry, federal and state agencies, NSB, and impact funds allocated from the State's 50% NPR-A revenue share.

H. Colville River Management 009

The State of Alaska has a vital interest in BLM management decisions affecting the Colville River corridor because of the State's significant ownership and management responsibility for lands and resources along the southern and eastern NPR-A boundary and the riverbed itself. The State believes that land management and fish and wildlife protection tools, other than a federal wild and scenic river designation, are available to protect the valuable surface resources in the Colville River drainage. The State is committed to working with BLM and ASRC to develop a cooperative river management plan that will protect paleontological, raptor, grizzly, moose, caribou, subsistence, and other wildlife and river resources in the Colville corridor. A cooperative river management process, similar to the one proposed by BLM for the Colville Bird Conservation Area, gives adjoining property owners and the public the opportunity to participate in a full discussion of management options for the area.

In conclusion, the State of Alaska supports protection of surface resources (i.e., raptors, song birds, moose, scenic and other river values) in the Colville River corridor and is willing to participate with BLM and other adjoining, private landowners in future efforts to identify appropriate management options for the Colville River corridor. The State does not support a recommendation for wild and scenic designation of the Colville River at this time, but is willing to participate in efforts to consider the establishment of a Colville Bird Conservation Area.

I. Subsistence Advisory Panel 010

The State of Alaska supports the NSB's recommendation that the NSB Fish and Game Management Advisory Committee be designated as the subsistence advisory panel proposed in the Draft EIS. The State supports this recommendation because it believes that a coordinated local-state-federal approach would greatly assist in reducing the inefficiency and ineffectiveness of duplicative advisory bodies for state and federal lease sales in close proximity to one another across the North Slope.

The NSB and the MMS set the stage for this approach in their recent commitment to use the local fish and game advisory committee for Lease Sale 170. Coordination of advisory functions also seems appropriate in light of the State's recent rollout of the area-wide leasing program. A coordinated approach could assist federal and state leasing agencies to: 010

- build an effective system for subsistence-related data collection and retention of monitoring information slope-wide,
- standardize the structure and operation of local advisory bodies for federal and state projects slope-wide,
- develop a methodology for assessing cumulative impacts, and
- identify common tools for resolving conflicts between subsistence users, surface resource protection and oil and gas exploration and development.

The NSB's recommendation also addresses the State's concern that project by project advisory organizations will place an impossible burden on individual leaders and representatives in local communities.

The State supports establishing the panel at the earliest possible date and preferably in tandem with the oil and gas lease sale process following a Record of Decision. In order to effectively carry out the important responsibilities described in the Draft EIS, the NSB Fish and Game Management Advisory Committee must receive adequate funding, proper technical support, and be accountable to BLM for carrying out its assigned missions. The panel should work cooperatively with the research and monitoring team on recommendations and projects related to subsistence. The State recommends that the subsistence advisory panel process include technical consultation with the ADF&G and the Alaska Department of Environmental Conservation (ADEC) and looks forward to working closely with BLM in the design and implementation of this innovative local advisory body.

J. Other Issues

Pik Dunes 011

The State of Alaska supports the no surface occupancy limitations proposed in Stipulation 46 of the Draft EIS for the area known as the Pik Dunes.

Umiat Air Park

The State of Alaska supports development of interpretive facilities at the Umiat airstrip but is unwilling to participate in development of facilities that will increase the human pressure on Colville River resources, including development of a primitive air park, camp site, and trail facility at Umiat. 012

Environmental Solutions in Progress

The following issues represent areas of concern to be specifically addressed in the resumption of leasing in and development of the NPR-A. The State expects to work with industry and citizens to resolve these issues.

1. Waste reduction and recycling

Recycling of batteries, used oil from rolling stock and other engines, antifreeze, and ferrous and nonferrous metals is performed successfully to some degree at existing North Slope oil fields. Recycling and other pollution prevention practices need to become an everyday business practice for all North Slope companies. Although the State of Alaska does not currently require oil field operators and contractors to recycle these products and materials, we are working closely with industry to implement these and other pollution prevention practices. The State strongly urges BLM to consider its proposed amendments to Stipulation 13 related to pollution prevention, waste reduction, and recycling.

Existing landfill space on the North Slope is beyond capacity and siting a new facility in the region will be extremely difficult. This reality makes it imperative that companies doing business in the NPR-A aggressively pursue pollution prevention and recycling programs on- and off-site. Increasing waste reduction and recycling by broadening the base that supports these programs will improve the economics for these commodities in the marketplace. As operators in NPR-A begin to understand the need to recycle, they will seek out opportunities to coordinate with other companies.

2. Sulfur Fuels

Mobile sources, non-road engines, and non-road vehicles are used extensively for exploration and development activities, and are largely unregulated by the permit process due to their portable and transitory nature. Mobile sources, non-road engines, and non-road vehicles are significant sources of sulfur dioxide air pollution, the emissions from which can cause ambient pollution concentrations to exceed national and state ambient standards. The sources predominantly burn diesel and gaseous fuels and measures are readily available for minimizing emissions.

Given these concerns, the State will be working closely with lessees on the North Slope, including the NPR-A, to implement a low sulfur fuel policy for all oil and gas activities that limits the sulfur content of diesel fuel to .05%, by weight and for gaseous fuels to 100ppm, measured as hydrogen sulfide. This policy will not cover fuels burned in passenger vehicles.

3. Dust Control

Oil and gas development can create an extensive network of roads. Vehicles traveling over gravel roads release a plume of alkaline dust. Dust blankets up to 10 centimeters thick have been observed next to heavily traveled roads on the North Slope. The addition of dust to the tundra has a significant impact (especially on a local basis) upon vegetation, soils, permafrost, and wildlife. The State encourages BLM to consider identification of reasonable controls to minimize airborne dust from roads. Controls may include, but are not limited to, the control of traffic volume and speed and the treatment of road surfaces with water or approved dust suppressants. A standard visibility limit that will be used is: road dust may not reduce visibility by greater than 20% during any time, as measured by an observer using Reference Method 22 of 40 C.F.R. 60, Appendix A.

4. Costs of Monitoring and Oversight

In order to ensure adequate monitoring and oversight, the State may negotiate reimbursement agreements for reasonable state agency regulatory costs (including personnel time, transportation, logistical support, food, and lodging) for all phases of development, including exploration, production, operation and abandonment. The State requests that BLM address this issue to ensure reasonable reimbursement for federal, state, and local government entities charged with oversight of development activities.

II. Stipulations

A. General Comments

Exception Clause – Two Part Test

The State requests that appropriate state and federal resource agencies, the NSB, and affected villages receive notification of any request for a stipulation exception and that consultation occur in advance of any final decision by the Authorized Officer (AO). 013

In addition, the State requests that the final exception clause be amended as follows: 014

"In the event that the AO determines that an exception to a lease or permit stipulation is in the best interests of the state and the nation, the AO shall find that implementation of the stipulation at issue is:

1. a) technically unfeasible or
   b) extraordinarily cost prohibitive or
   c) an environmentally preferable alternative is available,

   and

2. the goal(s) of the stipulation can be accomplished through the alternative means proposed by the lessee.

It is our understanding that consultation with appropriate State and federal resource agencies, NSB, and affected villages will occur during permit review and that exceptions will not be allowed if a proposed modification conflicts with other laws and/or permits. 015

Lease vs. Permit Stipulations

The State of Alaska recommends that all stipulations be attached to the lease with the understanding that they will also attach to applicable permits. This approach has evolved over 20 years of lease sale experience and is currently used on all State oil and gas lease sales. This option leaves less ambiguity for the lessee regarding enforceability of the provision and gives operators and the public a clear picture of expectations and requirements at the outset of the leasing process. Changes in future operations (technologies, practices) which support modification of a stipulation can be addressed through the exception clause. This recommendation does not intend to preclude the AO from expanding or adding to stipulation requirements during the permitting process. 016

The Final EIS should also state clearly that decisions regarding applicability of state permitting authority within NPR-A will be based on whether or not the State has primary authority for the regulated activity in question. 017

Definitions

The State recommends that a list of definitions be compiled and attached to the final stipulations. Given their enforceability, it is particularly important that terms used in the stipulations are consistent and unambiguous to the greatest extent possible. 018

The use of multiple, similar terms such as (#45) "prohibit oil and gas structures," (#46 and #47) "prohibit surface structures," and (#49) "prohibit surface occupancy," is confusing to the reader and will complicate effective enforcement.

Duplication and Consolidation

Lease stipulations should not reiterate specific federal or state permitting requirements defined in law or regulation. The State recommends that BLM attempt to consolidate stipulations so that they are fewer in number. 019

B. Specific Comments

Solid- and Liquid-Waste Handling, Hazardous Material-Disposal and Cleanup

Stipulation 1: a) Change to: "Attracting wildlife to food and garbage is prohibited." 020

Rationale: State regulation (18 AAC 60.015) requires prevention of attraction or access of wildlife to putrescible wastes. Wildlife and domestic animals are not allowed access to putrescible waste at waste disposal facility (18 AAC 60.035).

b) Add: "For groups of 15 persons or less, BLM or the permit applicant will provide written procedures to ensure that…"

Stipulation 2: Substitute: " All putrescible wastes shall be incinerated, domestic and construction wastes shall be disposed of in an approved landfill in accordance with U.S. Environmental Protection Agency (USEPA) and ADEC regulations and procedures, and all pumpable solid, liquid and sludge wastes shall be disposed of by injection in accordance with USEPA, ADEC and Alaska Oil and Gas Conservation Commission (AOGCC) regulations and procedures." 021

Stipulation 3: Change to: "Surface disposal or surface burial of solid waste is prohibited except at ADEC approved landfills." 022

Rationale: This is a significant land use problem on the North Slope and state/borough/federal/industry need to work together to find a solution. The Deadhorse landfill is closing and no new landfill permit has been issued or is expected to be issued in this region.

Stipulation 5: Change to: "Spills will be cleaned up to the satisfaction of the AO and any agencies with regulatory authority including the USEPA, ADEC and U.S. Coast Guard." 023

Note: this is consistent with State regulation 18 AAC 75.327.

Stipulation 6: Change to: " Notice of such discharge shall be given to the AO. Other agencies hall be notified as required by law." 024

Rationale: This change will capture the need to ensure that the State receives notice according to the timeframes required under state law that are often less than 24 hours.

Stipulation 7: Add: "Other state and federal regulations may apply and require additional planning requirements." 025

Stipulation 9: a) After "...volume." add : "The liner materials must be compatible with the stored product." 026

Rationale: This language is consistent with 18 AAC 75.075 and the language that ADEC uses.

b) Add: "Permanent fueling stations must be lined or have impermeable protection to prevent fuel migration to the environment as a result of overfills during fueling operations."

Stipulation 12: This stipulations limits refueling to areas beyond 500 feet from the water's edge of any lake or stream. As written, it will be very difficult for winter seismic and other field activities to comply given high lake densities in the planning area and in winters with heavy snowfall where the location of lakes and streams may be masked. The State of Alaska recommends that this provision be re-worked to provide flexibility for winter seismic and other field activities. 027

Environmental Management, Prevention, and Recycling ***(New heading)***

Stipulation 13: Delete "considered" and substitute with "addressed". 028

Stipulation 13a: Amend second sentence to read: "The plan must identify all waste streams by type, volume, and toxicity that will be produced..." 029

Add:

a) "Lessees shall conduct annual environmental compliance audits and develop waste management annual reports." 030

b) "Lessees will prepare a plan to achieve specific waste reduction and waste prevention goals for all phases of project development, exploration, construction and production. The plan should include activities that will integrate pollution prevention, concepts into purchasing, inventory, shipping/receiving, operations, maintenance, training, accounting and design. The plan shall have the goal of continuous environmental improvement and achievement of reduction goals developed through the planning process" 031

c) "Lessees shall develop schedules for implementation and review to meet reduction and prevention goals, designate accountable personnel to carry out action items, and specify budget line items for plan elements. 032

d) "Lessees shall implement a hazardous materials tracking system to ensure proper use, storage, and management of materials being used within industrial processes. The use of chlorinated solvents is prohibited." 033

Stipulation 13 c (3): Add: "Alternate disposal methods will require an National Pollution Discharge Elimination System permit certified by the state." 034

Ice Roads and Water Use

Stipulation 16: Add: "...lake, after consultation with ADEC, ADF&G and Alaska Department of Natural Resources (ADNR)." 035

Overland Moves and Seismic Work

Stipulation 19: After "...occupied campsite", add ",identified by BLM," so that the responsibility for identification is with BLM." 036

Stipulation 20: General recommendation: Split the stipulation into two subsections which differentiate between winter and summer activities. Change the title of stipulations to reflect this. 037

Stipulation 20(a): As written, the first section of this stipulation is unworkable and should be deleted. The State recommends that lessees rely upon denning sites identified by USF&WS. If this is unacceptable, the State recommends deletion of the sentence: "The cutting or compaction of such drifted snow [any drift greater than 6 feet] is prohibited within 25 miles of the Beaufort Sea." 038

Rationale: The location of all 6 foot high snow drifts along cut banks cannot be known when seismic lines are planned and approved (before the snow flies), and in the field these areas cannot always be avoided. The likelihood of impacting a polar bear denning site is highly unlikely. Instead, USF&WS or BLM should identify likely denning sites in advance. 3-D seismic surveys represent a preferred exploration technology that is relatively unobtrusive (conducted in winter) and therefore, should be encouraged. The use of 3-D seismic also reduces the number of exploration/delineation wells that might be needed to evaluate a potential hydrocarbon prospect. This is a further lessening of the risks of potential surface impacts.

Oil and Gas Exploratory Drilling

Stipulation 21: a) After production pads, add: "...or insulated ice pads is prohibited in..." 039
b) Change restricted period to "May 20 to Aug. 20" consistent with goose molting periods.

Rationale: Tundra travel considerations or construction windows should not limit exploratory drilling from insulated ice pads. Time periods to allow exploratory drilling from insulated ice pads should be changed to allow activities to start earlier or go longer than the traditional period for tundra travel or winter construction.

Stipulation 22: Comment to BLM that the standard for critical goose feeding habitat of "avoid alteration" is appropriate. 040

Facility Design and Construction

Stipulation 24: 041
a) Amend language to clarify that the data can be gathered concurrent with approved seismic and exploration activity.
b) Change language to say that study will "assist in providing data" necessary to determine facility design and placement..." rather than the study "will provide the data..."
c) The study also should include historical information regarding the distribution and range use of the Teshekpuk Lake Herd, as well as maps of caribou trails within the Teshekpuk Lake Caribou LUEA.

Rationale: Existing data on caribou movements is old and inadequate to properly design and place oil development facilities in the Teshekpuk Lake Caribou LUEA and protect sensitive caribou calving grounds and migration corridors.

Stipulation 28: Delete stipulation and substitute language proposed in Section II. C for CMA. 042

Stipulation 36: Add after "...movements,": "the AO may determine pipeline placement along roads to minimize delay or deflection of caribou movements." 043

Stipulation 38: a) After "...with ADF&G", add: "and NSB" 044
b) After "...facilitate wildlife" add: "and subsistence passage and access."

Stipulation 41: Add phrase at beginning of stipulation: "For those streams and lakes not listed in Stipulation 39,..." 045

Stipulation 42: a) State of Alaska recommends that the "major rivers" be defined, either by discharge, drainage area, type of stream, some combination of these or other criteria, or specifically name them. 046

b) The sentence which reads "Roads shall be designed and sited to minimize the length that is perpendicular to sheet flow." fits better in stipulation 43.

c) Also, delete: "Roads" and replace with "gravel structures constructed in the tundra wetlands..."

Stipulation 45: Stipulation 45 raises several examples of ambiguous terminology and the need for a definition section, i.e., surface facilities, permanent facility and permanent structures. This was mentioned earlier under general comments 047

Ground Transportation – No changes recommended

Air Traffic

Stipulation 54: Delete the stipulation and substitute the following: 048

"The FAA and BLM, in consultation with ADF&G and USF&WS, will establish appropriate helicopter planning and routing restrictions for the goose molting LUEA to prevent disturbance from June 15 – August 20."

Oilfield Abandonment – No recommended changes

Subsistence

Stipulation 61: Delete the stipulation. See Section II. F. – Research and Monitoring Program. 049

Rationale: State recommends that all research and monitoring be coordinated by a multi-agency federal, state, NSB, and industry team funded by BLM. Current data collection by state and NSB is not adequate to monitor the effects of potential oil and gas activities in the NPR-A planning area.

Stipulation 62: Term "facilities" needs to be defined. Lessees should not be required to allow third parties to use or enter facilities, as this stipulation implies. Buildings should be off limits unless the lessee voluntarily consents to let third parties use these facilities. 050

a) Substitute: "Lessees shall develop procedures for entrance to oil field development area."

b) Add: "public meetings" with other communication tools.

Stipulation 63: In second sentence, after "the AO…", insert ", in consultation with the Subsistence Oversight Panel, will resolve…" 051

Orientation Program

Stipulation 65: At end of second paragraph, add: "Individual training is transferable from one facility to another except for elements of the training specific to a particular site." 052

Traditional Land Use Sites – No recommended changes

Other Activities

Stipulation 76: Substitute: "Hunting by lessees employees and by agents and contractors is prohibited when persons are on work status. Use of lessee facilities, equipment, or transport for personnel access or aid in hunting or trapping is prohibited." 053

Stipulation 78: Delete phrase: "… except by subsistence users,…" 054

Stipulation 82: Substitute: "For non-fish bearing water bodies and streams, structures shall be restricted where feasible to an area at least 100 feet from the water body or stream." 055

C. Proposed New Stipulations

Facility Design and Construction

1. "New developments shall share facilities with existing development when prudent and technically feasible." 056

Rationale: Reduces ground disturbing activities and acknowledges current state of technology related to a reduced "footprint". Industry voluntarily complies with this requirement in many instances because of economic benefits.

2. "All crude oil, produced water, seawater and natural gas pipelines must be constructed to accommodate the best available technology for detecting corrosion or mechanical defects during routine structural integrity inspections." 057

Rationale: Maintaining pipeline integrity will be particularly important in the NPR-A planning area given the emphasis on remote, roadless development.

Best available technology should be employed as a means of ensuring continuous improvement of the tools used to prevent spills and protect the environment 057

"Lessees shall use smokeless flares for handling routine conditions and use auxiliary smokeless flares for planned events that exceed the capacity of routine flares. Lessees shall use flares which meet the federal New Source Performance design standards listed in 40 CFR 60.18." 058

Rationale: Improper flaring results not only in black smoke plumes, which are extremely apparent when viewed against the arctic sky, but also in deposition of unburned hydrocarbons on the tundra. Control technologies are used to achieve smokeless flare operation, thereby minimizing the potential for adverse visibility impacts. Proper flare design and operation are the chief control technologies. To help achieve smokeless operation, the careful study of each flaring situation by type and composition of gas flared, and the volume and frequency of upset conditions is needed to properly size the flaring system. The design effort should also include the selection of smokeless flaring technology. Finally, proper operation and maintenance procedures, including plenty of spare parts, are needed to assure the flares achieve smokeless operation.

4. "In general, roads will be discouraged in the NPR-A planning area except as necessary for connecting pads within independent, remote sites. Permanent roads and facilities shall not be constructed during the exploration phase of oil and gas development." 059

Rationale: The North Slope wetlands are valuable because of the hydraulic regime that has developed, geologic features, and habitat used by wildlife. Solid fill gravel roads change the hydrology of these wetlands causing possible loss of this valuable habitat by increasing thermokarsting of the frozen tundra, blocking water sources that feed down-gradient lakes, flooding of up-gradient areas or roads and disturbing the snow regime through drifting and decreasing the albedo as a result of spreading dust. Thermokarsting along roads can provide a path for draining wetlands. Changes in the tundra moisture levels will result in changes in vegetation types and variety. Roads will also provide access for people, which will present the potential of increased harassment of wildlife. Minimizing the construction of roads will not only greatly reduce initial costs of development but will also greatly reduce the costs of reclamation at the end of the life of the field. Moreover, gravel is extremely scarce in the northern region of the NPR-A planning area.

Other Activities

5. "Lessees will provide refresher response training to NSB and local community spill response teams on a yearly basis." 060

Rationale: This stipulation ensures that all new lessees in NPR-A will fully participate in the ongoing community spill response training efforts underway on the North Slope. Through the Alaska Clean Seas spill response cooperative, existing operators are supplying community-based spill response training to local responders. Local equipment and manpower resources are being integrated into an area-wide spill response network. This stipulation will ensure that this effort will be expanded to include NPR-A. 060

6. "Lessees will plan and conduct a major field deployment drill annually." 061

Rationale: This stipulation ensures that all new lessees in NPR-A will commit to a specific field exercise schedule. Existing operators participate in area-wide field deployment drills on a regular basis. This stipulation will ensure that NPR-A lessees participate in these area-wide drills and/or develop and stage their own field deployment exercises on a regular basis.

7. "Lessees shall participate in development of the Subarea Regional Spill Response Plan for the NPR-A operating area prior to production, including development and funding of environmental sensitivity maps (unless mapping is already completed)." 062

Rationale: This stipulation ensures that all new lessees in NPR-A will fully participate in the ongoing planning and mapping efforts underway on the North Slope. Existing operators are participating with NOAA and other federal and State agencies in an ongoing environmental sensitivity mapping effort for the region. In addition, a comprehensive Subarea Plan for the North Slope Region is under development. This stipulation will ensure that environmentally sensitive areas within the NPR-A operating area are identified and mapped so that development can be undertaken in an environmentally sound manner. The stipulation will also ensure that the Subarea Plan takes into account all relevant NPR-A activities.

8. "Lessees shall conduct a cultural/paleontological resources survey prior to any ground-disturbing activity." 063

Rationale: This is a standard State oil and gas lease requirement. Advance survey and work with local communities can avoid the unnecessary delay, cost, and conflict that arises from damage or disturbance of cultural/paleontological sites during exploration and development.

III. Technical Comments

The State of Alaska would like to offer the following technical comments for BLM review and consideration. Comments are given under the heading of the state agency which submitted the comments.

A. General

A careful editorial review should be made of the entire document to ensure that all cited references are listed in the bibliography. Omitted citations are identified below in specific comments from individual State of Alaska agencies. 064

B. Department of Environmental Conservation

On page II-38, in the discussion of the Section 404 of the Clean Water Act permits, it should state that ADEC issues 401 certifications assuring that state water quality standards are met. 065

On page II-38 it states that the USEPA issues Prevention of Significant Deterioration air-quality permits. The State of Alaska has primacy for this program and ADEC issues those permits. 066

On page III-A-38 it discusses the Department of the Interior Period. Included with the other facilities listed associated with the well sites operated by Husky Oil should also be solid waste sites. 067

Figure III.C.7-2 shows the pipeline infrastructure of the North Slope. . The proposed Badami pipeline is shown, but the Northstar, Alpine, Tarn and Liberty pipelines are not shown. This figure should be updated with this information. 068

Section IV.A.1.b. discusses oil and gas exploration and development activities. It discusses current primary and secondary production practices for the North Slope fields but precludes tertiary production practices. For instance miscible gas is not discussed. A section on tertiary practices should be added with an open-ended tone. Future extraction methods may yet to be developed. 069

On page IV-A-37, in the second paragraph of environmental factors, it discusses the spread of a spill from a pipeline leak that that is an aerial spray from the pressurized pipeline. It should be explained that the constant wind on the slope causes this type of leak to spread up to miles downwind of the leak. 070

On page IV-A-38, in the first paragraph of spill prevention and response, it discusses the use of a reserve pit for containment of any spills. 071

The use of reserve pits has been phased out. Any land that could be preserved if a spill could be directed into a reserve pit is insignificant compared to the amount of land that needs to be dedicated to have a reserve pit available at each drill site. 071

Also in this paragraph the regulatory citing should be modified. For the federal regulations, 40 Code of Federal Regulations (CFR) 112 should be added. This pertains to prevention of spills and requires the development of both a Spill Prevention Control and Countermeasures Plan and a Facility Response Plan. 40 CFR Part 300 contains the National Response Plan and may not necessarily apply to this section. The last sentence should relate the following statutes: AS 46.04.020, removal of oil discharges; and AS 46.04.030, oil discharge prevention and plans. AS 46.03.020(10)(A), which is stated, provides ADEC the authority to develop regulations, but is not specific in what those regulations say.

On page IV-A-38, in the third, fourth and fifth paragraphs of spill prevention and response, it discusses BLM's role in a spill. It discusses that BLM would oversee all actions needed to bring a well that has lost control back under control. The AOGCC has authority within the State of Alaska for oversight of wells and would have authority in the event of a well blowout for the State. Even though BLM would be in the lead, they would need to coordinate with the commission. It also states that BLM would direct cleanup of spills. This duty has been delegated to the Federal and State On-Scene Coordinators, which would be the USEPA or the U.S. Coast Guard, and ADEC. The U.S. Coast Guard provides the Federal On Scene Coordinator for spills within the Coastal Zone, defined as the oceans and adjoining shorelines 1,000 yards inland of the mean high tide line, and the USEPA provides the Federal On Scene Coordinator for spills in the Inland Zone, defined as all waters and adjoining shorelines located inland of the 1,000 yard boundary. ADEC has jurisdiction for the State on state lands and waters out to the three-mile limit. Typically for large spills, the Incident Command System would be used which requires a Unified Command as identified in the Alaska Federal/State Unified Plan for Response to Oil Discharges and Hazardous Substances Releases. The Unified Command consists of the Federal On-Scene Coordinator, the State On-Scene Coordinator and the Responsible Party's representative. BLM, acting in capacity as landowner, would be represented in the Incident Command System planning section and perhaps on an incident specific Multi-Agency Coordinating Committee that would liaison with the Unified Command. This section should be reviewed for accuracy and updated. 072

On page IV-C-5 it discusses spills and spill cleanup for Alternative B. In general the discussion on spills is for hydrocarbons, however other materials are spilled in the oil fields. A significant material spilled is produced water and seawater used for water flooding. Because of high salinity, these waters present special cleanup concerns and their own environmental concerns. Another example of a material that may be spilled is a 10,000-gallon spill of hydrofluoric acid that occurred around 1988. 073

A section should be included for these other hazardous materials that may spill. This comment pertains to the other alternatives listed. 073

On page IV-C-70, the second full paragraph in the first column, it discusses the regulation of muds, cuttings, and drilling fluids, as well as produced waters. It states that they are regulated through the USEPA by NPDES permitting. These wastes are rarely regulated through this process. 074

Injection of wastes is regulated by the USEPA Underground Injection Control program. The AOGCC has primacy for this program for Class II wells in the State of Alaska. Produced waters and drilling wastes fall within the Class II category. Some wastes are disposed through the annulus of producing wells. This activity is exempt from the Underground Injection Control program, however the AOGCC also regulates this practice for the State of Alaska. Surface disposal of drilling wastes would require a solid waste permit from ADEC.

On page VI-2 it lists agencies and organizations consulted. ADEC is not included on this list and should be. 075

C. Department of Fish and Game

Section II, Alternatives, Goose Molting Habitat, Page II-2. This paragraph should clarify that the area is the most significant molting habitat for brant, Canada, and greater white-fronted geese in the arctic. It also should mention that the first two are composed of many birds from western Alaska and south of the Brooks Range, and the greater white-fronted geese represent about 20% of the North Slope population segment. 076

Section II, Alternatives, Spectacled Eider Nesting Concentrations, Page II-2. This is a misnomer, more appropriately called "breeding range" because (a) only a few spectacled eider nests actually have been found in NPR-A, and (b) there are no nesting "concentrations" of these widely dispersed birds. 077

Section II, Alternatives, Pages-19, 20. BLM should redefine all Special Management Zones created under the 1983 Record of Decision, because they do not reflect current knowledge regarding necessary wildlife protection measures. The EIS emphasizes retention of Special Areas, but is unclear about protective measures that flow from these designations, other than that BLM may protect the focal resources or may require industry to determine that no permanent damage would occur. Lease area designations and stipulations in the EIS should be the primary commitments to resource protection, not Special Area provisions. 078

Figure II.B.7 should be labeled "proposed Bird Conservation Area (BCA)." The Colville River BCA under the Partners in Flight program, mentioned under Alternatives B-E. 079

Section II-C. Figure II.C.1-2. Alternative B. Page II-22. The legend for this figure indicates land within the Fish Habitat LUEA is closed to oil and gas leasing within 1/4 mile of Deep Water Lakes. However, the text associated with this figure (page II-19) states LUEAs are not available for leasing in this alternative. 080

Alpine Development Model

We question the assumption that all future oilfields will follow the ARCO Alpine model. This development proposal has only recently been approved by the State and components of the project have not yet been tested (e.g., horizontal directional drilling for pipelines under the Colville River). As we do not yet have any working fields of the Alpine type, all discussion of development scenarios and impacts is assumptive, rather than empirical. We believe that the Draft EIS should acknowledge that, while roadless oilfields are the goal, some fields may require more extensive surface development. Experience in the Prudhoe Bay/Kuparuk area has shown incremental expansion of development in some areas as infrastructure is built and new advances in technology allow exploitation of small reservoirs of oil that were uneconomical to recover in the original development scenario. It is possible that an Alpine-type development could grow from two drill pads, an interconnecting road, and an airstrip to something more involved, with potentially greater impacts to fish and wildlife resources and their habitat. In a multiple field scenario, depending on the distance between recoverable reservoirs, the possibility exists that a rather dense network of drill pads, interconnecting roads and pipelines could create a larger footprint similar to, although not likely as large as that found in, Prudhoe Bay or Kuparuk. There should be greater discussion of this type of potential development and associated impacts in addition to the Alpine-type development scenario. 081

The Draft EIS should present more discussion about how much development can be supported remotely from Kuparuk, especially under Alternatives D and E. We question whether up to five fields could be supported without some industrial base located west of the Colville River.

The Alpine development scenario is ARCO's proposed plan. Other potential developers within NPR-A may not hold the same philosophy regarding field development and may wish to develop leases in a different manner with potentially different impacts to biological resources. Although roadless oilfields are proposed in the Draft EIS development scenarios, roads are not prohibited unless the BLM chooses to place in stipulations that they are prohibited. Assumptions of roadless fields and minimal surface development lead to predictions of minimal impacts. We do not question that this could be the case, but the Draft EIS should acknowledge that impacts may be greater, depending on the development scenario.

On the other hand. roadless fields may not be necessary. particularly in areas where we are confident that wildlife disturbance can be avoided 081

Standards for Assessment of Impacts to Subsistence Uses 082

The Draft EIS does not describe the standards used for measuring the effects of impacts. This probably is a result of the paucity of information available about the actual effectiveness of the proposed stipulations and mitigation measures. Consequently, the assessment of effects, especially as they apply to subsistence resources and uses, may be overly optimistic. We recommend that the standards used for this analysis be discussed in the Draft EIS, and that a defensible evaluation process be established by state and federal agencies and the NSB. One way to test this proposed process would be to apply it to the nearby Alpine Project. Any analysis must address all potential causes for population changes. Declines are not necessarily related to development.

Generally speaking, the assessment of impacts in the table at II-42 to II-71 occurs from the point of view of the resource. Even though fish and wildlife resources may be presumed to be safe for human consumption, the perceptions of local residents may be quite different. For example, we know from the experience of Prince William Sound residents following the Exxon-Valdez oil spill that their perceptions concerning the safety of fish, wildlife, and marine resources for human consumption can last a long time. A similar situation occurred at the Red Dog Mine when increased concentrations of metals were present in the Wulik River and residents of the area limited the use of the fish resources for at least one year after the source of the metals was controlled at the mine. Some residents are reluctant to use certain resources even though the resources are considered safe for human consumption. The lessons learned from the Exxon-Valdez oil spill can enlighten and strengthen the assessment of potential impacts in this Draft EIS.

Updated Subsistence Information Needed

The Draft EIS presents a detailed discussion of subsistence activities conducted by North Slope communities in and near the NPR-A. The State is concerned that some of the available subsistence use land use information is outdated and additional research is needed to evaluate the effects of development on subsistence resources and uses. Current information is needed to better inform this EIS process and to provide an adequate basis for additional and more detailed land use planning in the areas proposed for leasing. Refer to Section III, Description of the Affected Environment, Subsistence, pages III-C-7 to III-C-31. 083

Effectiveness of Subsistence Stipulations 084

The Draft EIS analyzes "the impacts of ground-impacting-management actions and oil and gas leasing activity on the subsistence-harvest patterns of communities in or near the planning area." In the "Effects on Communities" subsection, local residents identify specific impacts based on their past observations and concern for the potential effects of future oil and gas activities. The Draft EIS identifies stipulations designed to mitigate or avoid these impacts, many of which have been applied to oil and gas activities on state lands. However, we are unaware of any systematic assessment being done to confirm the effectiveness of these stipulations. Refer to Section IV, Effects, Alternatives B-E, Subsistence-Harvest Patterns.

Effects of Oil Spills 085

The descriptions of the effects of oil spills to fish and wildlife resources and their habitat in the alternatives are modeled on existing spills recorded in the North Slope oilfields. As most of these spills have been small to date or have occurred in winter when biological resources in the area are low and cleanup conditions are relatively easy, the impression is that minimal effects to the resources of NPR-A will occur from spills.
The potential for a valve failure or pipeline spill during summer and the effects to the resources should be acknowledged and discussed for each of the alternatives. The low probability - high effects spill event at the end of the document should be integrated into the effects to species discussions for each of the applicable alternatives. This would provide the reader a more realistic representation of potential effects of spills to the resources. The Draft EIS also should address long-term chronic effects of contamination and should present an assessment of impacts to at least the most sensitive areas open to leasing, in the event of a major spill.

Spills to Marine Waters 086

The potential for oil spills to contact marine waters, either carried downstream in streams or from drill pads or pipelines immediately adjacent to the coast, needs to be identified or discussed further in the effects sections for Alternatives B, C, and D. Alternative D has over 50 miles of coastline in the Kalikpik River delta, Atigaru Point, and Kogru River area where coastline is available for leasing and drilling from a pad on the coast could occur (as at F Pad, Milne Point field for example). Alternative C has about 10 miles of coastline surrounding the Kalikpik River delta area that would be available for leasing and development.

Alternative B does not have any coastline available for leasing, although about 2 miles of shoreline is between 200 and 500 m from onshore areas open for leasing. The potential proximity of structures that may enable oil to reach the marine environment and affect species from birds to whales needs to be given greater consideration in this planning effort. Current spill response planning efforts in the existing North Slope oilfields all address spills to marine waters from onshore facilities. 086

Effects of Seawater Spills to Terrestrial Environments 087

There is almost no mention of the potential effects of seawater spills to vegetation, water quality, or invertebrate populations in potentially affected waterbodies. As seawater flooding of the oil reservoir to enhance recovery is proposed and discussed in the document, the effects of seawater pipeline spills should be identified and discussed.

Spills Reaching Teshekpuk Lake 088

There is little to no discussion of potential impacts to Teshekpuk Lake and its resources should an oil spill reach the lake from one or more of the streams that feed the lake. The discussion should address impacts from widespread dispersion of oil along lakeshore habitats.

Arbitrary Recovery Times and Lengths of Impacts to Species 089

In sections on effects to fish, birds and mammals, estimates of mortality and recovery times from oil and gas related activities are presented. The Draft EIS should clarify the criteria used to estimate the magnitude of mortality or the recovery times for these impacted species and whether these estimates based on any empirical data or published references. In several instances, the recovery times given for particular species or species groups varies within and between alternatives. Furthermore, the discussions of effects and recovery times are mostly based on single events; there is little discussion of compounded effects of multiple spills and subsequent recovery times. Variation in age of reproductive maturity, reproductive interval and productivity also should be considered when estimating recovery times.

As an example, fish are stated to recover from construction related disturbance in 5 to 10 years, and from spills in three years. In many arctic and subarctic fish populations, successful reproduction (i.e., survival of young-of-the-year fish to one year) does not occur on a yearly basis. Evidence for this can be seen in the strength of individual year-classes of fish. If successful reproduction only occurs on average every 3 to 5 years, and if an oil spill or other impact occurs during a year that normally would successfully produce fish, loss of this infrequent strong year class could prevent the population from recovering from the disturbance in the predicted timeframe. Recovery times for areas of high fish density are expected to be similar to that for areas of low density.

Recovery in isolated lakes could be a particularly long term process, as the option of immigration of new individuals into the population is not available. 089

Displacement by Disturbance or Facilities 090

Statements are made in several locations, particularly for birds, that organisms will move to adjacent undisturbed habitat if disturbed or if their habitat is disturbed by gravel pads or gravel mine sites. Such statements assume that adjacent habitat is not fully occupied by the particular bird species. Although adjacent habitat may be available for occupancy by displaced organisms, such habitat may not be optimal for successful reproduction and survival. Lack of suitable nest sites, forage or prey availability, and the territorial behavior of many species may limit the suitability of adjacent habitat. Thus, habitat that may appear vacant, may actually be fully occupied.

Wide-scale Waterfowl Values 091

In general, sections on bird resources do not describe the relationship of birds that occur in the Northeast Planning Area to their breeding and wintering ranges, or the public values of these resources beyond the North Slope. For example, black brant are valued as a viewing and harvest resource in four countries. Brant geese molting in NPR-A have substantial value to subsistence users of the Yukon-Kuskokwim Delta. NPR-A white-fronted geese are harvested in prairie regions of Canada, the Central and Mississippi Flyways, and in Mexico.

Canada geese are used by people in interior Alaska and the Pacific Flyway. Tundra swans are viewed and hunted in the Central and Atlantic Flyways. These broad resource connections were summarized at the April NPR-A Symposium and included in comments on earlier drafts of Draft EIS sections. The lack of consideration for interstate and international values of waterfowl contrasts sharply with the nine-page assessment of potential effects on northwest salmon stocks (III-B-52).

Impact Detection and Natural Population Fluctuation 092

Throughout discussion of potential effects in all alternatives, the phrase ".....[impacts/recovery] may not be detectable above natural fluctuations of the population and survey methods/data available" is used frequently for fish, birds, and mammals. Although arctic bird populations, for example, exhibit substantial annual variation, and methods of some surveys are often not refined enough to detect small to moderate changes in abundance, these factors often are used in the Draft EIS to avoid rendering judgments on potential impacts to birds, to negate judgments that have been included, or to imply that there would be no impacts. The Draft EIS disregards the possibility of obtaining new information through directed studies or monitoring programs that should be required prior to and during development.

Gravel Sources 093

In several locations within the Draft EIS, statements are made that gravel necessary for pad development, roads, and airstrips will be obtained from existing gravel sources on the east side of the Colville River. Although this may be a valid assumption for development scenarios within 10 to 20 miles of Nuiqsut, it is not likely to be valid for areas more distant. It is unrealistic, because of logistical and economic considerations, to assume gravel will be hauled 40 to 50 miles to build pads, roads or airstrips. The assumption that gravel could be hauled from existing gravel mine sites to the coast, barged to coastal staging areas, and then hauled to the development area appears even more unrealistic (page IV-A-14). This type of activity would require the material to be handled at least three times, would require two coastal staging areas, and would require preparation of ice roads over two winters to move the material. Such an endeavor may not be given serious consideration in a real situation because of the costs involved and the development time required to conduct the transport of material. Greater consideration should be given to discussing development of potential material sites within the NPR-A and the effects such development would have on the resources of the NPR-A.

Number of Potential Oilfields 094

Within Environmental Consequences, Effects, Alternative E, Multiple Sales, the statement is made that 2 to 10 oilfields will be developed. In discussions in all of the other Alternatives, one to five oilfields are assumed to be developed. The effects to resources of NPR-A would be considerably greater if the number of fields is doubled.

If the discussion in Multiple Fields is intended to address 2 to 10 oilfields, then a considerably greater effort needs to be made in discussing the increased impacts to fish and wildlife and other resources.

Miscellaneous

Text within the Draft EIS uses an undisciplined mixture of metric and English units of measure. Distances, for example, are reported in inches, feet, yards, meters, kilometers, and miles. Metric or English should be chosen as the primary system for reporting units of measure and the document should be edited accordingly. 095

Section IV, Environmental Consequences needs some additional editing to make it a more readable document. As written, some subsections have a considerable amount of repetitious material; others have been edited well and have little repetitive material. Further editing would make the document easier to read and evaluate, and reduce the length of the final document. 096

D. Department of Natural Resources

Page IV-F-19. Economy - Conclusion - First Sale 097

The summary of state revenues at the end of the second paragraph ($1.5 to 2.25 million, $2.5 to 6 million, and $1.25 to 3 million) are different than the numbers stated in b.(4) on the same page ($1.5 to 3 million, $2.5 to 10 million, and $1.25 to 5 million), and different still are the numbers in the summary document ($10.5 to 36 million, page 60, Summary document).

Appendix D - Section 810 of ANILCA Findings and Conclusions 098

The conclusion that alternatives D and E "would significantly restrict subsistence uses" is not supported by the data, analysis, or conclusions in Sections IV.E.13 or IV.F.13, the analysis of impacts on subsistence. Nor do the conclusions on page D-5 and D-6 flow from the discussion on the same page, for example, on page D-5, the last sentence under paragraph a. states "no significant impacts to subsistence-harvest patterns", but the bottom of the page states "Alternative D would significantly restrict subsistence uses". The rest of the document does not support this conclusion.

Affected Environment 099

A number of publications cited in Chapter 3, Description of the Affected Environment, Section A1, Physical Characteristics-Terrestrial Environment: Physiography (III-A-1b), Soils (III-A-1c), and Sand and Gravel (III-A-1d) are not listed in the bibliography. Many of these will be important references for possible future development and should be listed:

Meyer, 1995 (p. III-A-1)
Merritt and Hawley, 1986 (p. III-A-2)
USGS, 1985 (p. III-A-1)
USDOI, 1973, 1979, 1985, 1995 (p. III-A-31)
Kunz and Mann, 1997 (p. III-A-36)

For the sections on Soils (III-A-1c) and Sand and Gravel (III-A-1d), two important USGS publications should be cited and summarized but are not. These publications were mentioned in the Division of Geological & Geophysical Surveys (DGGS) comments on the preliminary draft and are listed again below: 100

Carter, L.D., 1983, Engineering-geologic maps of northern Alaska, Teshekpuk Quadrangle, USGS Open File Report 83-634, scale 1:250,000.

Carter, L.D., and Galloway, J.P., 1985. Engineering-geologic maps of northern Alaska. Harrison Bay Quadrangle. USGS Open File Report 85-256. scale 1:250,000. 100

There is no discussion of potential hazards from earthquakes, sea-ice processes, or coastal erosion. Since there is some discussion of engineering problems from permafrost, it is inconsistent that other possible engineering constraints are not discussed as well. Granted, the earthquake potential is low (but not nonexistent); however, a brief discussion of earthquake history and potential in this area would be useful, particularly for the benefit of those outside Alaska who assume that the entire state has high earthquake risk. The lack of such a discussion was part of the reason that a State of Alaska oil and gas lease sale on the North Slope was cancelled by the courts a few years ago. 101

Coastal processes, particularly erosion and ice shove, have high potential for impacting nearshore and onshore development. These processes should at least be acknowledged and briefly described. Mitigation of these hazards is required by coastal zone regulations.

Page II-3, Pik Dunes. It is stated that "cultural remains dating from about 12,000 years ago have been found there." If so, we have never heard of them. Sites of this age are exceedingly rare, so we would like to be informed of such significant finds. BLM is supposed to report cultural resource sites found to the State Historic Preservation Officer on an annual basis. Further, the Pik Dunes sites do not appear on the cultural resources distribution map on page III-C-5. 102

Page II-38, National Historic Preservation Act (NHPA) Consultation. It is stated that "the NHPA requires consultation with the Alaska State Historic Preservation Officer and the President's Advisory Council on Historic Preservation." The Council need be consulted only if there will be an effect on cultural resources listed on or eligible for inclusion in the National Register of Historic Places. Our only consultation so far has been an opportunity to review, under rather tight timeframes, portions of the "cultural resources" sections taken out of context and without any description of the alternatives. 103

Cultural Resources

General: Archaeological resources are protected on both state and federal land. The archaeological resources in the planning area are not well known but are expected to be rich and varied in some areas.

Page II-41, Table II.D.2. The list of topics does not include Cultural Resources. They are included in the body of the table on pages II-62-63 between Economy and Subsistence. 104

Page II-62. Alternative A. It is stated that "impacts to [cultural resources] can be satisfactorily addressed through the current assessment and decision-making process." This is probably true, but nowhere in the document is that assessment and decision-making process described for the reader not well-versed in cultural resource management law, regulations, and BLM manuals. 105

Page III-C-4, Cultural Resources. This section goes into great detail about the importance of the Mesa Site, an area outside the planning area, without explaining why. A brief cultural history of Northern Alaska follows, but no known sites in the planning area are actually discussed. Some description of the types of known sites would be useful to the uninformed reader. It is certainly true that "only a few portions of the planning area have been examined for the presence of cultural sites." It would be useful to go into more detail on where these few reconnaissance surveys have occurred. There should also be some discussion of the potential to discover new sites. It appears to be fairly high in the southern half of the planning area. 106

Page IV-B-16, Effectiveness of Stipulations. The current "Environmental Assessment review and clearance process" is not explained to the casual reader (see comment above, pg. II-62). This may seem to be a trivial comment, but the same statement is used throughout the document to explain how BLM will manage cultural resources for each alternative. The reader is not given much of an idea about what this may mean. Mentioning Sections 106 and 110 of the NHPA and Executive Order 11593 (later incorporated into amendments to Section 110) lengthens the section but does not inform the reader. 107

The "NSB History, Language, and Culture Commission" is the NSB Commission on Inupiat History, Language, and Culture. 108

Page IV-C-46, Effectiveness of Stipulations. It is stated that "(t)he protection of cultural resources in the planning area would follow the established and proven procedures developed by the BLM during the NPR-A exploration of the late 1970's and early 1980's." Again, the non-specialist reader is left uninformed about what these procedures might be. 109

The issue of when archaeological surveys will be required is not discussed. ADNR oil and gas leases contain a stipulation that a survey shall occur prior to any ground disturbing activity. This is straightforward and predictable; the oil companies have worked with it very well. If this is the approach BLM will take it seems like this document would be the place to bring it up. 110

E. Office of the Governor– Division of Governmental Coordination

On page II-27 mention of appendix needs to be removed. 111

Line 14 states that stipulations without an asterisk would be attached to the applicable permit. This statement should identify the permits it pertains to (federal and state permits). It is unclear how feasible it is for a planning document with an uncertain expiration date to state that certain stipulations will be placed on permits. Stipulations are usually placed on permits during the permit review. 112

On page II-34, line 9, "affects" is a verb and should be replaced by "effects." See additional comments about stipulation 64 at the end. 113

On page III-A-4, map should include Badami pipeline, currently being constructed. 114

On page II-A-14, maps beginning on this page have acronyms not used on the list of acronyms and symbols should be changed to match list 115

In section 5 b, first paragraph, first sentence, Federal Coastal Zone Management Act was amended in 1996 (in addition to 1990 amendments). 116

In section 5 b (1), first paragraph, reword sentence 5. " ... federal activities and federally permitted activities must be consistent with the standards of the Alaska Coastal Management Program (ACMP) which include state standards found in regulation (6 AAC 50) and the enforceable policies found in local coastal district programs. Thirty-three coastal districts have developed coastal management programs with enforceable policies that become part of the ACMP." Federally permitted activities will likely occur as the result of the lease sale and therefore should be mentioned. 117

In section 5 b (1), first paragraph, remove sentence 8, "The Division of Governmental Conservation is currently in the process of publishing the ACMP enforceable policies." This document is already printed, but it only copies existing policies. By mentioning it here, readers may think that ACMP was somehow changed. In addition, for the NPR-A, readers only need to reference the NSB's coastal management program. 118

In section 5 b (1), second paragraph, reword sentence 3, " . . . when federal actions or federally permitted activities on these excluded lands . . . " 119

On page IV-A-41, there are more proposals than trans-Alaska gas system to develop North Slope gas. This discussion should mention this fact (e.g., Alaska Natural Gas Transportation System and a pipeline by producers along the TAPS route). 120

On page IV-C-66, section b, second paragraph, first sentence, as discussed earlier, add federally permitted activities to federal activities Both have to be consistent with the ACMP 121

On page IV-C-66, section b (1), this policy applies to any waterfront development (i.e., marine waters, lakes and rivers) while the discussion only mentions marine waters. 122

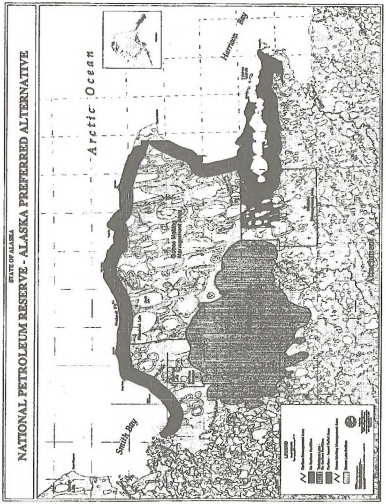
The remaining discussion of ACMP standards in this section ends with a statement that "no conflict with this policy is anticipated." It is unrealistic to think that there won't be conflicts. A better way to state this would be: "Mitigation measures (name them) will reduce conflicts and Alternative B will be consistent with this standard." This comment applies to many of the discussions on Coastal Zone Management in the document. 123

On page IV-G-1, Effects on the Cumulative Case, the introductory paragraph for the cumulative effect analysis references projects that could be expected "during the life of the proposed planning effort." The length of the planning effort is not defined, however, so it is uncertain what time period this analysis covers. 124

F. Department of Transportation and Public Facilities

Although the existing transportation systems on the North Slope, the Dalton Highway and the Deadhorse Airport operated by the Alaska Department of Transportation and Public Facilities, are described in the Draft EIS, the impact of proposed development on these facilities was not. It is recommended that BLM include language that addresses the adequacy of the Dalton Highway and Deadhorse Airport to support the NPR-A project. It is our opinion that both facilities are adequate. 125

In addition, the movement of vehicles between the present oil field road system and the communities of Nuiqsut and Barrow is briefly mentioned but not evaluated. As oil field development moves further west, the demand for better seasonal access should be expected to increase. Winter road and/or ice road access becomes an alternative for transporting some types of freight between the existing highway system and these communities. BLM should officially "ask the question" about the relationship between the proposed leasing/development and the desirability of expanded overland winter access. 126


STATE OF ALASKA
NATIONAL PETROLEUM RESERVE - ALASKA PREFERRED ALTERNATIVE
Arctic Ocean
Harrison Bay
Smith Bay
Northeast Area
LEGEND

STATE OF ALASKA
NATIONAL PETROLEUM RESERVE - ALASKA PREFERRED ALTERNATIVE
Beaufort Sea
Colville River
LEGEND
Attachment B

ACRONYM LIST

ADEC	=	Alaska Department of Environmental Conservation
ADF&G	=	Alaska Department of Fish and Game
ADNR	=	Alaska Department of Natural Resources
ANCSA	=	Alaska Native Claims Settlement Act
ANILCA	=	Alaska National Interest Lands Conservation Act
AO	=	Authorized Officer
AOGCC	=	Alaska Oil and Gas Conservation Commission
ASRC	=	Arctic Slope Regional Corporation
BLM	=	Bureau of Land Management
CAH	=	Central Arctic Caribou Herd
CMA	=	Caribou Management Area
DCNES	=	Draft Comprehensive National Energy Strategy
EIS	=	Environmental Impact Statement
FAA	=	Federal Aviation Administration
GMMA	=	Goose Molting Management Area
LUEA	=	Land Use Emphasis Area
MMS	=	Minerals Management Service
NEPA	=	National Environmental Policy Act
NPR-A	=	National Petroleum Reserve- Alaska
NSB	=	North Slope Borough
TAPS	=	Trans-Alaska Pipeline System
TLH	=	Teshekpuk Lake Caribou Herd
WAH	=	Western Arctic Caribou Herd
USEPA	=	United States Environmental Protection Agency
USF&WS	=	United States Fish and Wildlife Service
USGS	=	United States Geological Survey

Errata Sheet

State of Alaska Comments on National Petroleum Reserve - Alaska Draft Integrated Activity Plan / Environmental Impact Statement

The following technical comments were inadvertently omitted from Part II, Section III, C. of the State of Alaska's final comments:

Section II, Table II.D.2e-1, Comparisons of Impacts for Alternatives A-E, and the Cumulative Case, Pages II-41 to II-71. The comments made concerning this table also need to be addressed in the main body of Section IV. This table also will need to be modified following any corrections or alterations to arguments presented in the main body of Section IV.

Cumulative Case, All Resources. There are no introductory remarks to describe what is meant by the Cumulative Case; the reader has to go into Section IV to comprehend that part of the table. One assumes that this describes a combination of effects from present and future oil and gas activity on the mid-Beaufort Coast. There needs to be consistency in the scope of the effects listed under the Cumulative Case. For some resources (Water Quality, Water Resources, Birds), the cumulative case appears to address only those potential cumulative effects within the planning area. For others (Vegetation), the scope of the potential cumulative effects is the entire North Slope of Alaska. A statewide scope is used for marine mammals and a US-wide scope is used for endangered and threatened species. 127

Water Resources, Alternatives B - E. Under Multiple Sales, the statement is made that shared infrastructure will reduce impacts. This subsection also should address the impacts described for the first sale as they would apply to multiple sales, as well as impacts that would occur if infrastructure was not shared. 128

Birds, Alternative D, First Sale. This summary states effects are not expected to be significantly greater than Alternative B. However, Alternative D allows leasing in areas used by waterfowl to the west and south of Teshekpuk Lake that are not available in Alternative B. Exploration and development in this additional area could produce additional impacts to birds. 129

Birds, Alternative D and E, Multiple Sales. The summary for Alternative D states effects from oil and gas development could substantially change the planning area bird distribution and/or population levels. Alternative E, which allows leasing in the Goose Molting Habitat LUEA - one of the most heavily used areas for waterfowl in the planning area, states there would be no significant effect to planning area populations. Alternative E, by its nature of allowing 130

development throughout the planning area, would be expected to have much greater effects than the other alternatives, including Alternative D. Displacement of "planning area populations" could be significant, if seasonal aggregations are considered as such. More appropriately, the effects on birds should be described without regard to the planning area boundary. Given the significant aggregation of several goose populations, losses of birds from oil spills and other effects, under multiple sales, may be detectable and may occur at levels that far exceed natural fluctuations. 130

Birds, Alternative E, First Sale. With the availability of the high use Goose Molting Habitat LUEA for leasing, one would expect greater effects of oil spills to birds than that predicted for Alternative B where this area is not available for leasing. The summary does not list the major potential effects to birds discussed in the text and does not describe "substantially greater effects" that are predicted to occur. These effects could include mass displacement of molting geese (significant portions of rangewide and regional populations) to marginal habitats with high predation rates. Measurable population-level mortality could occur. Oil spill effects would be much greater than under Alternative B--up to 60,000 flightless geese in large shallow lake basins would be vulnerable to major spills or blowouts, and hydrologic connections between groups of basins heightens the potential scope of spill impacts. 131

Birds, Cumulative Case. This summary is restricted to the NE NPR-A planning area and does not address oil spills, physical loss of habitat, or potential abandonment of molting areas. This section also understates potential effects on birds from the more open leasing alternatives D and E. Disturbance could be frequent and from many sources, rather than "limited primarily to occasional disturbance from aircraft activities." A variety of impacts could be lethal, long-lasting, and or broad in extent, rather than "temporary, nonlethal effects." 132

Terrestrial Mammals, Cumulative Case. This discussion is identical to that presented in Alternative E, Multiple Sales. It should examine the cumulative effects of oil development to caribou on the entire North Slope. 133

Marine Mammals, Alternative D. Adverse effects from onshore spills reaching marine waters should be included in the effects expected to occur in this alternative. 134

Endangered and Threatened Species, Alternative D. As Alternative D opens to development areas within the Spectacled Eider Nesting Concentrations LUEA that were closed under Alternatives B and C, potential effects would be expected to be greater. Under Alternative D, more coastline would be available to leasing, thereby increasing the risks of oil spills reaching marine waters and potentially impacting bowhead whales. While the effects of multiple sales to the resources would be the same as for a single sale, the magnitude of these effects should be substantially greater. 135

Endangered and Threatened Species, Alternative E. Potential effects to bowheads would be expected to be even greater in Alternative E because of the even greater amount of shoreline that is available to leasing. As all of the Spectacled Eider Nesting Concentration LUEA would be open to leasing under this alternative, impacts would be expected to be considerably greater than Alternative B where no leasing would occur in the nesting areas. While the specific effects of multiple sales to the resources would be the same as for a single sale, the magnitude of these effects should be substantially greater. 136

Endangered and Threatened Species, Cumulative Case. The description of the Cumulative Case is deficient and nonspecific: impacts to breeding spectacled eiders could be much more significant than "limited primarily to occasional disturbance from aircraft activities, resulting in temporary, nonlethal effects." The effects could be lethal and they may be lasting for the small and scattered North Slope population. Physical loss of habitat from gravel placement or gravel extraction also would be a cumulative effect of oil development to eiders. 137

Subsistence, Alternative E and Cumulative Case. If oil development under this scenario is sufficient to displace caribou and make them more difficult to pursue for at least one harvest season by Nuiqsut hunters, it seems logical to expect this condition to occur for the life of the field rather than for just one year. In the cumulative case, such resource reductions and unavailability would be expected to be even more severe. 138

Section III, Biological Resources, Migratory Fish, Page III-B-8, paragraph 2. The Arctic char included in the list of migratory fish should be called Dolly Varden (*Salvelinus malma*). Arctic char (*Salvelinus alpinus*) on the North Slope are generally freshwater lake-dwelling fish. 139

Section III, Biological Resources, Birds, Habitat Types, Page III-B-11. There is an important distinction between habitat types and landcover classifications. Bergman et al. (1977) and Derksen et al. (1981) designated waterbird habitat types by associating bird use with cover types. Markon and Derksen (1994) and Pacific Meridian (1996) provided only classification of remotely sensed land cover. 140

Section III, Biological Resources, Birds, Other Geese, Page III-B-27. It should be noted that molting Canada geese originate from interior Alaska breeding areas, and perhaps from nesting areas near Fish Creek or Prudhoe Bay. 141

Section III, Biological Resources, Birds, Ducks, Page III-B-27. The reference to an upward king eider population trend is inappropriate; there is no 1997 report by Larned and Balogh (bibliography cites only for 1993 and 1994) and the period 1992-96 is not sufficiently long enough to establish a trend. 142

143 Section III, Biological Resources, Threatened and Endangered Species, Spectacled Eiders, Page III-B-47. This section is difficult to understand because the current older survey reports are not described in an orderly way. In paragraph 1, the statement that "no data are available for examining overall trends on the North Slope" is incorrect. Surveys specifically for eiders have been conducted since 1992, but this short series and high variance in annual estimates preclude statistical demonstration of a trend (integrate with better information in paragraph 3). In paragraph 2, the speculation (attributed to TERA 1995) that there are 20-30,000 spectacled eiders on the North Slope is not supported by any recent surveys (Larned et al.); this should be deleted. Aerial surveys (unspecified) do not indicate distribution of nesting (paragraph 3). This section should acknowledge BLM's reliance on transect point data to indicate the distribution and abundance of spectacled eiders. The utility of these data to leasing and site planning decisions is marginal because they reflect single, seasonal "snapshots" of eider occurrence. They do not accurately reflect associations with important habitats, and they provide no evidence of breeding or other life history functions. The DEIS should recognize that a substantial amount of summer field work will be necessary to document the breeding distribution and habitat requirements of this threatened population before development plans can adequately be assessed for impacts.

144 Section III, Biological Resources, Threatened and Endangered Species, Steller's Eider, Page III-B-49. Only the US breeding population of Steller's eiders was listed as threatened, in contrast to the 1993 listing of the world population of spectacled eiders (currently USFWS is considering delisting the Arctic Russia component of spectacled eiders).

145 Section III, Biological Resources, Birds and Threatened and Endangered Species. The following text citations to literature are not in the Bibliography: Derksen et al. 1992; Jens(e)on 1990; Larned 1997; King 1997a; Wilk 1987 (source only for Alaska Peninsula tundra swans). R. King (1997) citations should be listed as "R. King, Unpubl. Data" or "USFWS Unpubl. Data", rather than "pers. comm.," which implies a personal opinion or judgment.

146 Section III, Biological Resources, Birds, Figure III.B.4-7, Mean Number of Young Counted on Lakes Occupied by Molting and Brood-rearing Geese in Goose Molting Habitat, Page III-B-21. It is unclear in the legend if the mean number of young counted on lakes occupied by molting and brood-rearing geese is young/mile or kilometer, young/pair, or young /lake. This figure also is inaccurately cited on III-B-23 as showing patterns of brood distribution for brant and white-fronted geese.

147 Section III, Biological Resources, Birds, Page III-B-23, paragraph 2. Figure I-5 does not depict the Teshekpuk Lake Special Area or the Goose Molting Habitat LUEA as indicated in the text.

148 Section III, Biological Resources, Terrestrial Mammals, Caribou, Winter Range Use and Distribution, Page III-B-42. The citation - Davis, Valkenburg and Boeye (1982) should be corrected to state Davis, Valkenburg and Boertje (1982).

149 Section III, Biological Resources, Marine Mammals, Spotted Seal, Page III-B-45. Peard Bay is located on the Chukchi Sea coastline and therefore should not be considered in the discussion of Beaufort Sea haulout and concentration areas. The DEIS states about 1,000 spotted seals use the Beaufort Sea coast. Spotted seals are known to use portions of the Beaufort Sea east to the Colville River Delta, however, the number of seals that use this area is not known.

150 Section III, Social Systems, Subsistence, Page III-C-7. The discussion in the second column regarding the state subsistence law is not entirely correct. The Alaska Supreme Court ruled in December 1989 that the rural provisions of the state subsistence law violated the Alaska Constitution. This decision prohibited the state from using rural residency as a basis for subsistence eligibility but did not affect the remaining provisions of the 1986 subsistence statute. The final paragraph on this page lists eight categories of concerns regarding oil development identified by North Slope residents during the NPR-A scoping process. The DEIS addresses some of these concerns but does not systematically respond to this important local input. The DEIS would be strengthened considerably by linking the proposed stipulations and mitigation measures to each of these specific concerns.

151 Section III, Social Systems, Cultural Values, Pages III-C-39, 40. At the bottom of page III-C-39, reference is made to the public testimony emphasizing the "need to collect and use traditional Native knowledge in the EIS assessment process and in the final decision process." Although excerpts of testimony from North Slope residents at public hearings are presented in the DEIS—some of which constitutes traditional knowledge—we cannot determine that traditional knowledge has been systematically collected, evaluated and applied to the conclusions made in the DEIS. Similarly, the concern expressed at NPR-A scoping meetings about the need for cumulative effects to be addressed has not clearly been identified as a goal in the proposed stipulations affecting subsistence on pages IV-G-19 to IV-G-20.

152 Section IV, Basic Assumptions, Alternatives D and E, Page IV-A-28. In the description of Alternative D, the statement is made that Alternative D focuses on maximum protection of certain wildlife resources (waterfowl and caribou). This assessment is not entirely accurate as, for example, habitat south and southwest of Teshekpuk Lake important to tundra swan, loons, and greater white-fronted geese is available for leasing and thus not afforded the same degree of protection as those areas north and northeast of Teshekpuk Lake. The description should be revised to more accurately describe the true degree of protection to biological resources and their habitat under this alternative.

The description of Alternative E should note that impacts to biological resources and their habitat are expected to be significantly greater under the full leasing scenario than those described for the other alternatives.

Section IV, Effects, Alternative A, Birds, Effects from Ground-based Activities, pages IV-B-6, 7. Several references cited in this section are not present in the bibliography. Furthermore, others that are used may not be the best choice for discussing impacts to birds. The discussion of impacts to gyrfalcons, ptarmigan, and snowy owls during winter uses a reference that discusses summer impacts to primarily waterfowl (Murphy and Anderson 1993). Careful selection of appropriate references needs to be made for this and other discussions in the DEIS. 153

The discussion regarding the effects of increased access to refuse and its effects on predator populations needs to be made consistent with that discussed on page III-B-43, and that for the other alternatives

Section IV, Effects, Alternative A, Marine Mammals, Effectiveness of Stipulations, page IV-B-12. The stipulation on aircraft to maintain a 1,000 ft AGL altitude would be effective at minimizing disturbance to seals hauled out on ice. A much higher altitude, about 3,000 ft, would be required to minimize disturbance to spotted seals hauled out on land. 154

Section IV, Effects, Alternative B, Water Quality, Development, Page IV-C-8, paragraph 3. Blockage of sheet flow, the broad scale movement of water through undefined channels and tundra wetlands, besides leading to ponding on the upslope side of roads or pads, may lead to drying of tundra on the downslope side of the structures. Depending on the orientation of roads, snow drifts may not occur equally on both sides of roads, potentially exacerbating drying conditions. Adequate numbers of culverts often are not placed in road fills to ensure adequate cross-drainage and the culverts that are placed in the fill often are not set to the correct depth. Maintenance of culverts also has a long history of problems in the North Slope oilfields. 155

Section IV, Effects, Alternative B, Birds, Pages IV-C-19 to 24. There is no meaningful analysis of effects on specific bird resources and sites for the southern areas proposed for leasing; the discussion is made up of generic considerations. This concern also applies to Alternative C. 156

Section IV, Effects, Alternative B, Birds, Effectiveness of Stipulations, Page IV-C-24. In this subsection of the DEIS, a long list of stipulations are presented that are expected to minimize impacts to birds. However, most of these stipulations are moot, as leasing is prohibited in the LUEAs and the need for protective stipulations in these areas is unnecessary. These lists of stipulations should be trimmed to only those that would be applicable to the particular leasing scenario. This comment is also applicable to similar subsections for other species groups and alternatives. 157

Section IV, Effects, Alternative B, Terrestrial Mammals, Effects of Disturbance by Species, Caribou, page IV-C-26. Is there a reference for the statement that caribou that winter near Prudhoe Bay and Camp Lonely have become accustomed to human activities whereas caribou that winter elsewhere are less tolerant? 158

Section IV, Effects, Alternative B, Terrestrial Mammals, Effects of Disturbance by Species, Caribou, page IV-C-26, 27. Caribou avoidance of riparian habitats (the Carruthers et al. 1984 argument that caribou avoid the TAPS corridor for predator avoidance rather than disturbance from road traffic) is not apparent on the many other rivers of the North Slope. Avoidance of roads occurs in the oilfields in non-riparian areas. 159

Studies of caribou distribution and movements along the Milne Point Road, a road with light traffic, showed avoidance of this area by caribou.

The statement is made in the DEIS that roads will not be built along the pipeline to TAPS, thus limiting disturbance to caribou. Unless this condition is stipulated by the BLM, a road could be built along the line with increased effects to caribou. The DEIS should consider the potential increased effects to caribou of a road along the line, unless stipulations are included prohibiting an adjacent road.

Section IV, Effects, Alternative B, Terrestrial Mammals, Effects of Disturbance by Species, Moose, page IV-C-27. The DEIS should note areas of pipeline may have to be elevated considerably beyond the five foot minimum to ensure adequate clearance for unobstructed movements by moose, particularly during winter. 160

Section IV, Effects, Alternative B, Terrestrial Mammals, Effects of Disturbance by Species, Grizzly Bears, page IV-C-27. This paragraph should be reorganized as it is a scattered mix of points addressing both grizzly bears and polar bears. 161

Section IV, Effects, Alternative B, Terrestrial Mammals, Effects of Disturbance by Species, Muskoxen, page IV-C-28. McCarthy and Seavoy (1994), which discussed bears, is probably the wrong citation for the reference discussing responses of muskoxen to seismic operations. 162

Section IV, Effects, Alternative B, Terrestrial Mammals, Effects of Spills on Caribou, Moose, and Muskoxen, page IV-C-29. The DEIS states oiled mammal hair would be shed during summer before winter fur is grown. Depending on the timing of the spill event (e.g., if it occurs in the fall), oiled fur would not be shed until the following summer. 163

Section IV, Effects, Alternative B, Marine Mammals, Effects of Noise and Disturbance, page IV-C-32. Aircraft disturbance to hauled out seals from aircraft at normal operating altitudes probably would not result in injury or death to ringed or bearded seal pups. 164

Section IV, Effects, Alternative C, Fish, Page IV-D-6. The effects of increased rates of harvest of fish by workers (oil industry or non-oil industry workers) should be discussed in this and the other alternatives where the deep-water lakes are available for leasing. Fish in isolated lakes, lake trout in particular, are particularly susceptible to overharvest that could occur if camps or facilities are placed within walking distance of the lakes. 165

Section IV. Effects, Alternative D, Table IV-E-1, Page IV-E-1. This table lists the LUEA status for oil and gas leasing under Alternative D. In the table, the Fish Habitat LUEA is listed as available for leasing. In Table II.D.1, page II-36, oil and gas leasing is allowed in the Fish Habitat LUEA only in that portion outside of the Goose Molting Habitat LUEA. 166

Section IV. Effects, Alternative D, Birds, Pages IV-E-8, 9 and Threatened and Endangered Species, Pages IV-E-12 to 14. There is no meaningful analysis of effects on specific bird resources, habitats, and sites for the additional areas proposed for leasing. The DEIS provides no quantitative comparison of Alternative D to other alternatives, even in relative terms, for vulnerable bird resources (e.g., X% more loons than under Alternative B) or potential impacts from the larger development scenario (up to 12 pads, several development fields, and 2 staging bases). Under this alternative, substantially more bird resources would be vulnerable to development impacts, including moderate to high densities of loons, swans, breeding geese, ducks, and shorebirds in the Kogru River region and west and southwest of Teshekpuk Lake (see Figures III.B. 4-1 to 4-19). However, the largely generic discussion leads to a conclusion that effects are "not expected to be significantly greater than discussed for Alternative B." This faulty rationale is particularly obvious in discussion of effects on spectacled eiders (page IV-E-13), where the same conclusion is stated, regardless that about 30% of the Spectacled Eider LUEA would be open for lease, including some "relatively high-density" areas. 167

Given industry interest in areas nearer to the coast, and documented wetland/multi-species bird values near Kogru and west Teshekpuk Lake, this conclusion that effects are not expected to be significantly greater is unfounded. The potential impacts on birds would be significantly greater under Alternative D than under Alternative B. Alternatives D and E are the only ones that significantly impinge on the coastal band of high-value waterbird habitats, where leasing interest and prospective development density are greatest. In this section, Effectiveness of Stipulations again mentions irrelevant seasonal restrictions in the Goose Molting LUEA (21) and does not address bird protection stipulations that would apply to operations.

Section IV. Effects, Alternative D, Subsistence, Effects on Communities, page IV-E-20. There is no direct discussion of effects of multiple sales to subsistence activities under this alternative; only potential effects to the resources themselves are described. 168

Section IV. Effects, Alternative D, Terrestrial Mammals, Caribou, Effectiveness of Stipulations, page IV-E-11. Mitigation and effectiveness thereof will also depend on restricting use of new roads, airports, etc. for access. Otherwise alternative mitigation measures will be necessary to avoid impacts of increased access (e.g., more restrictive hunting/fishing regulations). 169

Section IV. Effects, Alternative E, Birds, pages IV-E-9,10 and Threatened and Endangered Species, pages IV-E-15 to 17. The section Oil and Gas Exploration and Development Activities states there are no construction activities that are expected to occur in marine waters so no effects 170

on birds in marine waters are anticipated. Information elsewhere in this document indicates the potential need for docks/causeways and seawater treatment facilities for waterflood operations. Construction, maintenance, or retrofitting of either of these facilities has the potential to adversely affect birds using nearshore marine waters. 170

Nearly all comments on Alternative D (above) apply also to the discussion of Alternative E, particularly the absence of a quantitative comparison of affected resources and impacts, and faulty conclusions. This section (page IV-E-9 to 10) is characterized by numerous contradictions between statements that acknowledge potentially larger and more significant impacts than other alternatives and conclusory statements that suggest these are mostly inconsequential. The discussion largely disregards information discussed at the Caribou/Waterfowl Impacts Assessment Workshop (Appendix E) and presented in Section III on the importance and sensitivity of molting geese. The following are the most important conclusions that are flawed or very likely incorrect:

1. Regarding disturbance, it is stated that "hundreds to thousands of molting geese could be affected . . . effects from which individuals would recover within hours to 1 day." This conclusion is unwarranted because frequency of disturbance is not considered; individual molting geese that are repeatedly disturbed from feeding or resting can fail to regain sufficient body reserves for migration and are subject to higher mortality.
2. The extent of interlake lands is not quantified, but is described as a "large proportion" of the Goose Molting LUEA, a statement not born out by reviewing Figures in Section III. The assumption that facilities can be sited on these areas, sufficiently far from goose molting lakes, disregards the extensive visibility of these elevated areas from large lake basins (also disregards that interlake areas are important caribou corridors).
3. Comparisons with bird behavior observations at Prudhoe Bay are likely not valid. Geese at Prudhoe Bay have been born and raised in an industrial environment and may be acclimated. Flightless geese that molt in an isolated region cannot be expected to react as calmly.
4. Displacement of molting geese is characterized as temporary, but the section acknowledges potential effects on long-term use by brant and that impacts are largely unknown. The statement that more study warranted does not provide assurance in the leasing decision process.

Conclusions: The conclusions reached about the effects of Alternative E are unfounded and incongruous with the vulnerability of resources, particularly molting geese, under the full leasing alternative. There is no reason to expect that effects will be the same as Alternative B, with the larger lease area of Alternative E. Greater oil spill effects are acknowledged, in contrast to an erroneous conclusion that they, too, would be about the same as Alternative B. Contrary to the text, potential spill effects on geese are not sufficiently discussed in Section IV.L - Effects of a Low Probability, High Effects Oil-Spill Event. The statement is made that no significant effects

are expected on the "planning area population." Population effects within the planning area are the least concern when regional and interstate effects could occur. 170

Section IV, Effects, Alternative E, Terrestrial Mammals, pages IV-F-11, 12, 13. The discussion of impacts to terrestrial mammals in this section focuses almost entirely on caribou. The discussion also needs to address effects of exploration and development activities on moose, grizzly bears, and muskoxen. Habitat loss, oil spills, and disturbance effects should be addressed. 171

Section IV, Effects, Cumulative Case, Water Quality, page IV-G-3. The DEIS states the quality of freshwater within the planning area is not affected by any of the major projects considered in the cumulative case. This section should consider the effects of seawater and oil spills, hazardous materials and other substances commonly used in oilfield development. 172

Section IV, Effects, Cumulative Case, Terrestrial Mammals, Effects of Increased Access from Roads and other Facilities, page IV-G-8. Disturbance to denning grizzly bears and changes in food availability should be considered in the discussion of cumulative effects. 173

Section IV, Effects, Cumulative Case, Terrestrial Mammals, Effects of Global Warming, Page IV-G-8. Discussions of the effects of global warming on fish and wildlife habitat in this and other sections of the document are not germane to the assessment of oil and gas development to the resources of NPR-A and should be dropped from the document. 174

Section IV, Effects, Cumulative Case, Marine Mammals, Effects of Other Activities, Pages IV-G-11, 12. It is unclear to what purpose a discussion of commercial fishing in the Bering Sea on marine mammals has on the assessment of impacts of oil and gas development to marine mammals in the area of NPR-A. If all potential impacts to species within their yearly range are to be considered, discussions of impacts, for example, of hunting on migratory waterfowl in Canada, the United States, and Mexico should be examined, if this concept is to be pursued. This discussion could be dropped from the document without detrimental effects. The section on effects from hunting/harvesting on the Pacific walrus population also could be dropped. 175

Section IV, Effects, Cumulative Case, Pages IV-G-1 to 24. This is a detailed and important section of the DEIS. However, information concerning what is known about the cumulative effects of oil and gas activities on subsistence patterns is found in several places in this section and is difficult to follow. We recommend that the Summary be expanded to include relevant information from other subsections (e.g., Sociocultural Systems and Coastal Zone Management). 176

Section IV, Effects, Cumulative Case, Subsistence-Harvest Patterns, Pages IV-G-16 to 20. An assessment of the cumulative effects of North Slope oil and gas leasing activities on subsistence harvest patterns is long overdue. On page IV-G-19, the second paragraph in the second column points out that monitoring to assess many of the actual and potential impacts on subsistence has 177

not been done in the past and is not occurring now. However, the next paragraph asserts that several of the stipulations proposed in this DEIS would "substantially protect subsistence resources and practices." Until the proposed mitigation measures have been systematically evaluated, their effectiveness is unknown. We recommend that state, federal agencies, and the North Slope Borough commit to conducting this evaluation. This will provide essential background information to guide the work of the proposed Subsistence Advisory Panel. 177

Section IV, Effects, Unavoidable Adverse Effects, Endangered and Threatened Species, Page IV-H-2. This section states marine vessel traffic and disturbance to bowhead whales is unavoidable. It would appear that timing restrictions on the limited marine vessel activity that would probably occur in development of the planning area could be used to avoid or minimize impacts to bowheads. This concern also should be addressed in Alternatives D, E, and the Cumulative Case. 178

Section IV, Effects, Irreversible and Irretrievable Commitment of Resources, Birds, page IV-J-1. Habitat alteration or disturbance that causes long term abandonment of molting lakes by geese should be included as a potential impact. 179

Section IV, Effects, Effects of Natural Gas Development and Production, Page IV-K-1. The discussion of natural gas development assumes the gas line will parallel the oil line and use some of the oil facilities. The discussion needs to address the addition of pipelines, pads, and roads for this development to the existing facilities, and the increasing effect of the maze of facilities to fish and wildlife populations. Other impacts that need to be addressed include the potential need for additional buried or elevated river crossings for pipelines, and increased levels of noise from compressor stations and other gas-handling facilities. The discussion on the effects of gas development on birds states effects are expected to be temporary, nonlethal, and local, affecting a few individuals. It should be noted that "temporary" would likely mean the life of the gas field, and that some effects, such as habitat alteration, would be permanent if final rehabilitation does not include removal of gravel pads and roads. 180 181

Page A-2, Appendix A, Inventory and Monitoring: #7: Subsistence. As a general statement, we note that the inventorying and monitoring tasks recommended in Appendix A focus principally on the resources. We support this proposed work but recommend expanding the scope of monitoring program assigned to the Subsistence Advisory Panel, as described in the final sentence of the second paragraph, to developing "a program to monitor the effects of oil and gas development on subsistence uses, users, and the resources used for subsistence purposes." We support the commitment by the BLM to working with the proposed Subsistence Advisory Panel and the North Slope Borough to developing this program, and request that the Division of Subsistence also be consulted. 182

Bibliography. The list of references needs to be carefully reviewed to ensure all documents referenced in the text are included here. The current list also needs editing to ensure consistency 183

in format among the citations. There are several instances where the authors of the reference are listed merely as a series of initials. Duplicated references also need to be removed. 183

References used in preparation of these comments:

Post, R.A. 1990. Effects of petroleum development operations in Alaskan wetlands: A critique. Technical Report No. 90-3. Alaska Department of Fish and Game, Division of Habitat, Juneau. 112 pp.

1660-001
The BLM believes that it has a responsibility to balance protection of surface resources against the country's need for oil and gas exploration and development. The law does not require that in protecting surface resources, the BLM must prohibit oil and gas development. However, the law also does not require that all lands within NPR-A be subject to a lease sale. The 42 U.S.C. § 6508 calls for an expeditious program of competitive leasing but requires "such conditions, restrictions, and prohibitions" as the Secretary deems necessary to protect surface resources. During the early 1980s leasing program, BLM determined to specifically exclude some lands from leasing.

1660-002 through 1660-012
The BLM thoroughly examined the State's Preferred Alternative and incorporated many elements in the Preferred Alternative of this final IAP/EIS. The BLM's Preferred Alternative protects the goose-molting and caribou-habitat areas (Teshekpuk Lake, Fish Creek, and the Pik Dunes), with no permanent surface occupancy or no leasing (Sec. II.C.1). The BLM's adopted approaches are similar to State recommendations on consulation (Preferred Alternative Stipulation 61), a research and monitoring team (Sec. II.F.7), Colville River corridor management (Sec. II.C.1), and a Subsistence Advisory Panel (Sec. II.F.6). In addition, BLM adopted many State suggestions for changes in or additions to the list of stipulations. However, BLM did not give the State's preferred alternative detailed consideration in this final IAP/EIS, because the State's alternative is a variation on and combines slightly different elements; elements already within the range of existing alternatives displayed in the IAP/EIS. The BLM did not adopt the State's proposal to delay leasing in the northernmost portion of the planning area until certain conditions are met. The BLM believes that after these condition are met, another EIS would be necessary to conduct leasing in the area. Consequently, BLM believes that delaying leasing as the State proposed would, in practice, amount to not leasing the lands at this time.

1660-013
Consulting with appropriate Federal, State, and NSB regulatory and resource agencies and affected villages in or near the planning area will play an integral role in the oil and gas plan and permit review process developed by BLM. The NSB and local communities will be directly involved in reviewing exploration and development plans. Through the consultation process outlined in Preferred Alternative Stipulation 61, that involvement includes exception requests. The BLM intends to coordinate and consult with appropriate Federal and State regulatory and resource agencies during exploration and development plan and permitting reviews as well. The agency anticipates that almost all major exceptions will be raised at this time. However, in the event that exceptions are raised outside of the plan review process, BLM will make every effort to notify and consult appropriate Federal, State, and NSB agencies in advance of any final decision by the AO.

1660-014
This comment is addressed in the introductory paragraphs preceding the Preferred Alternative Stipulations (Sec. II.C.7).

1660-015
This comment is addressed in the introductory paragraphs (Sec. II.C) preceding the Preferred Alternative Stipulations. Please see Response 1660-013.

1660-016
Please see Response 1652-004.

1660-017
Please see Response 1652-004.

1660-018
The BLM reviewed and revised the Preferred Alternative stipulations to ensure consistency and

unambiguous use of words and phrases e.g., "facilities," "structures," and "occupancy."

1660-019
The BLM consolidated stipulations and reduced the total Preferred Alternative Stipulations to 79.

1660-020
Recommendations (a) and (b) are integrated and addressed in Preferred Alternative Stipulation 2. Recommendation (b) is addressed by requiring all lessees and permitted users to have a written procedure in place to ensure that wastes are properly handled and disposed of to avoid attraction of wildlife.

1660-021
This comment is addressed in Preferred Alternative Stipulation 3.

1660-022
This comment is addressed in Preferred Alternative Stipulation 3.

1660-023
This comment is addressed in Preferred Alternative Stipulation 7.

1660-024
This comment is addressed in Preferred Alternative Stipulation 8.

1660-025
This comment is addressed in Preferred Alternative Stipulation 9.

1660-026
This comment is addressed in Preferred Alternative Stipulation 14.

1660-027
This comment is addressed in Preferred Alternative Stipulations 16 and 24n.

1660-028
This comment is addressed in Preferred Alternative Stipulation 1.

1660-029
This comment is addressed in Preferred Alternative Stipulation 1a.

1660-030
This comment is addressed in Preferred Alternative Stipulation 1b and d.

1660-031
This comment is addressed in Preferred Alternative Stipulation 1a.

1660-032
This comment is addressed in Preferred Alternative Stipulation 1b.

1660-033
This comment is addressed in Preferred Alternative Stipulation 1c.

1660-034
This comment is addressed in Preferred Alternative Stipulation 5e.

1660-035
This comment is addressed in Stipulation 16 (Alternatives A-E) and Preferred Alternative Stipulation 20.

1660-036
This comment is addressed in Preferred Alternative Stipulation 23.

1660-037
Please see Response 1652-013.

1660-038
Please see Response 1752-018.

1660-039
This stipulation prohibits exploratory drilling from May 1 through September 30 in the Teshekpuk Lake Caribou LUEA. The purpose of the stipulation is to reduce noise and other disturbances during the calving and summer-use period. Exploration activities coinciding with a production facility are exempted because they do not significantly add to the noise level at an existing production site. Exempting insulated ice pads from the limitation would be contrary to the purpose of the stipulation, and compromise the level of protection that caribou experts assert is necessary to protect calving cows and their calves during the May through September period in the caribou LUEA. (Stipulation 21 [Alternatives A-E] and Preferred Alternative Stipulation 25 do not dictate whether the exploration pad is made of gravel, ice, or a combination of ice and gravel.)

In response to comment (b), BLM's Preferred Alternative prohibits leasing and exploration in the Goose Molting LUEA (which is wholly within the Teshekpuk Lake Caribou LUEA). Consequently, reference to the Goose Molting LUEA has been deleted from Preferred Alternative Stipulation 25. Stipulation 25 will apply to that portion of the caribou LUEA that is outside the Goose Molting LUEA and available for leasing and exploration. See Special Caribou Stipulations area, Figure II.C.1-1.

1660-040
Stipulation 22 (Alternatives A-E) has been deleted because the Preferred Alternative prohibits leasing, exploration, and construction of permanent facilities in the Goose Molting LUEA, and no critical goose-feeding habitat exists outside of the Goose Molting LUEA.

1660-041
Proposed changes a through c are in Preferred Alternative Stipulation 29.

1660-042
The Preferred Alternative developed by BLM prohibits construction of permanent oil and gas facilities and exploration drilling within the leased portion of the Teshekpuk Lake Caribou LUEA area (west, south, and east of Teshekpuk Lake). The BLM gave serious consideration to the State of Alaska's recommendation for leasing, including limitations on surface occupancy. The BLM incorporated part of the recommendation in the Preferred Alternative, specifically leasing. Leasing will be allowed in much of the area recommended for leasing by the State. However, greater restrictions will be imposed on permanent and winter surface occupancy.

1660-043
Stipulation 36 (Alternatives A-E) has been amended in part to respond to the comments. Preferred Alternative Stipulation 35 now reads "…lessees *shall* place pipeline on the appropriate side of the road (depending upon general caribou movements in the area)." The Authorized Officer, in consultation with appropriate regulatory and resource agencies, will be involved in pipeline placement issues during the review of the development plan. If dissatisfied, the Authorized Officer will have an opportunity to amend the proposed for pipeline placement.

1660-044
This comment is addressed in Preferred Alternative Stipulation 37.

1660-045
This comment is addressed in Preferred Alternative Stipulation 41.

1660-046
This comment (a) is addressed in Preferred Alternative Stipulation 42. The BLM is confident that almost all major rivers requiring bridges instead of culverts are listed in Preferred Alternative Stipulation 39. However, if the Authorized Officer, in consultation with other agencies, determines that the characteristics of another river warrant classification as a "major river" for purposes of Stipulation 42, the current language provides flexibility for a site-specific decision.

Comments (b) and (c) are addressed by Preferred Alternative Stipulation 43.

1660-047
Please see Response 1660-018.

1660-048
The BLM may consult with the FAA regarding air-traffic restrictions in the planning area. However, BLM does not believe that inclusion of an express consultation requirement with FAA is required in Stipulation 54 (Alternatives A-E). The BLM has the authority to impose flight restrictions anywhere within the planning area on any party authorized to use BLM-administered lands. Preferred Alternative Stipulation 53 applies to all "BLM-permitted operations," e.g., oil and gas projects, guided recreational tours, etc.

1660-049
The Preferred Alternative includes the creation of the Interagency Research and Monitoring Team. The team will design and implement a coordinated research and monitoring program for the planning area (Secs. II.F.7 and II.C.1). Subsistence monitoring is addressed in Stipulation 61 (Alternatives A-E) because of its importance to a successful oil and gas leasing program. As amended, Preferred Alternative Stipulation 59 directs lessees to develop and implement a plan to monitor the effects of oil and gas activities on subsistence. Given that Authorized Officer approval of the plan is required, BLM will strongly encourage lessees to cooperate with the Interagency Research and Monitoring Team and the Subsistence Advisory Panel in the development of a plan that the team and the Authorized Officer can endorse.

1660-050
This comment is addressed in Preferred Alternative Stipulation 60. Procedures the lessee develops related to entrance to facilities may include reasonable restrictions related to building access.

1660-051
Stipulations 63 and 64 (Alternatives A-E) have been deleted and substituted with Preferred Alternative Stipulation 61. Stipulation 61 (Alternatives A-E) describes the consultation and conflict resolution process to be used in addressing potential conflicts between oil and gas development and subsistence activities. The Subsistence Advisory Panel plays an integral role at all stages of the consultation and conflict resolution process.

1660-052
This comment is addressed in Preferred Alternative Stipulation 63.

1660-053
This comment is addressed in Preferred Alternative Stipulation 74.

1660-054
Stipulation 78 (Alternatives A-E) has been deleted from the Preferred Alternative stipulations, given that the Preferred Alternative prohibits the construction of oil and gas facilities in the Goose Molting LUEA.

1660-055
Preferred Alternative Stipulation 78 clarifies the type of structures and the scope of waterbodies intended to be addressed by Stipulation 82 (Alternatives A-E). The State's comment was not integrated because the stipulation provides the minimum water-quality protection for all waterbodies, fish bearing and nonfish bearing. The BLM believes that the 100-foot structure limitation (all structures other than oil and gas facilities) can be administered and effectively enforced without the "feasibility" language recommended by the State. If circumstances warrant, permitted users can seek a modification under the exception provision.

1660-056
This comment is addressed in Preferred Alternative Stipulation 32.

1660-057
This comment is addressed in Preferred Alternative Stipulation 38.

1660-058
This comment is addressed in Preferred Alternative Stipulation 79.

1660-059
This comment is addressed in Preferred Alternative Stipulation 48.

1660-060
This comment is addressed in Preferred Alternative Stipulation 11.

1660-061
This comment is addressed in Preferred Alternative Stipulation 12.

1660-062
This comment is addressed in Preferred Alternative Stipulation 13.

1660-063
This comment is addressed in Preferred Alternative Stipulation 74.

1660-064
The document has been reviewed to ensure cited references are included in the Bibliography.

1660-065
The wording has been changed to reflect the State of Alaska permit certifications.

1660-066
Please see Response 1660-065.

1660-067
Section III.A.1.f(1)(c) has been amended in response to the comment. In addition, the Umiat and Lonely solid waste sites have been added to the list of sites in Section III.A.1.g(2).

1660-068
Please see Response 1334-009.

1660-069
Miscible gas injection and other tertiary recovery techniques are not mentioned because they add to environmental impacts for ongoing production operations. Enhanced recovery practices and new methods (future developments) generally are confined to existing infrastructure (pads, pipeline corridors, development wells). Secondary recovery techniques, such as gas injection and waterflooding, require dedicated new wells, perhaps a new pipeline route from the gas or seawater treatment plant. Consequently, impacts associated with secondary recovery techniques are significantly greater than tertiary recovery techniques. The Development Activities section is a general description of normal operations. Specific details of production operations, such as well stimulation methods and various tertiary recovery techniques, are beyond the scope of this generalized overview.

1660-070
An explanation was added to Section IV.A.3.

1660-071
Section IV.A.4 has been revised to reflect the information presented in this comment. Reference to 40 CFR 112 and AS 46.03.020 and .030 have been added to Section IV.A.4.

1660-072
Section IV.A.4 is revised and reflects the information in this comment.

1660-073
Revised Spills and Spill Cleanup (Sec. IV.C.3.b(2)(b) includes chemical and saline water spills.

1660-074
Section IV.C.15.b(9) has been revised. The text contains information presented in the comment.

1660-075
The agency's name has been added to the list in Section VI.

1660-076
The Goose Molting Habitat LUEA description (Sec. II.B.2). has been revised. The description emphasizes the significance of the waterfowl area.

1660-077
The LUEA name has been changed to Spectacled Eider Breeding Range.

1660-078
Lease area designations and stipulations in the IAP/EIS are the primary commitments to resource protection. The two Special Areas encompass the majority of the areas where these occur, and the Preferred Alternative has been organized to reflect this in Section II.C.1.

1660-079
The legend for Figure II.B.7 has been changed.

1660-080
The legend has been clarified. The Fish Habitat LUEA, described in Section II.B.5, is partly defined as extending ¼ mi "around the perimeter of any fish-bearing lake in the deep lake zone." The hatching on Figure II.C.1-2 corresponds to the deep lake zone.

1660-081
We did not state that all future oil fields will follow the ARCO Alpine design, only that Alpine could serve as a representative model. As stated in other responses (please see Responses 1334-004 and 1652-031), there could be many similarities between Alpine and new projects within the NPR-A. As recognized by the commenter, the design proposals for Alpine have been reviewed and approved by several State and Federal agencies who have evaluated the safety aspects of the project. Considering the excellent safety record for North Slope fields, we feel comfortable with extrapolating this current, approved technology to new projects in the foreseeable future.

We do not believe that using a Prudhoe Bay/Kuparuk analog is valid for future NPR-A develop-ment. These fields contain infrastructure supporting the production of over 15 Bbbl of oil or nearly 30 times the oil that is estimated to be available in the planning area at an average oil price of $18 (see Figure III.A.1.a(3)-9). It is possible that incremental expansion of development in NPR-A will occur beyond the single-field Alpine model, but to propose a massive development on the scale of Prudhoe Bay/Kuparuk is unsupported by our assessment of the undiscovered petroleum potential in the Northeast NPR-A. The development scenarios analyzed in this IAP/EIS are based on these carefully modeled petroleum resource estimates, not speculation.

We fully acknowledge in the *Development Activities* sections (IV.A.1.b) that future projects will be designed for unique site-specific conditions. It is quite likely that development designs will differ according to field size, site conditions, engineering experience, or a variety of other factors. Minimum footprint and roadless development are common goals for new developments of medium-sized fields (ARCO's Alpine; BP's Badami). These strategies are not only cheaper for the company, but are also less disruptive to the environment. The commenter is correct in assuming that at some point in time remote fields in the NPR-A could require support from an industrial base other than Kuparuk. It is premature to speculate on the location of new industrial sites because that decision will depend on the location of new oil discoveries. Note that the Preferred Alternative prohibits the connection of oil fields within the NPR-A to the existing road system on State land to the east (Stipulation 48).

1660-082
The EIS describes standards for measuring the effects of impacts (Sec.IV.C.13, Effects Definitions and Effects Levels). The BLM believes that effects-level assessments may be overly optimistic because of the "paucity of information available about the actual effectiveness of... proposed stipulations and mitigation measures," and the BLM agrees that "a defensible evaluation process be established by State and Federal agencies and the NSB."

The mechanisms proposed by BLM to deal with just these issues would be the proposed Interagency Research and Monitoring Team (IRMT) and the Subsistence Advisory Panel (SAP). The SAP would be the appropriate body to consider the perceptions of local residents concerning the overall assessment of impacts on resources. The SAP, in cooperation with the IRMT, would also design long-term subsistence resource monitoring regimes.

1660-083
The BLM, the MMS, and the State are concerned that subsistence land-use information is outdated and affirm the need for more research to better evaluate the effects of development on subsistence resources and uses. It is our intention to pursue cooperative studies with the State and the NSB. Studies would begin an inventory and long-term monitoring of subsistence resources and uses in North Slope communities. The vision is to integrate harvest, social and economic surveys; ethnographic methodologies; the communities' oral history; and Geographic Information System. The proposed Interagency Research and Monitoring team and Subsistence Advisory Panel would be the key groups responsible for developing new land-use planning research and monitoring cumulative effects.

1660-084
The BLM believes that no systematic assessment has or is being done to confirm the overall effectiveness of stipulations and mitigation on subsistence resources and uses. Because of this void, BLM proposes establishing an Interagency Research and Monitoring Team and a Subsistence Advisory Panel to advise the BLM on issues such as access, traditional land use sites, monitoring impacts on subsistence, cumulative

impacts, conflict resolution, and maintaining healthy wildlife populations for subsistence users. Any monitoring effort of subsistence effects would likely start to track and assess the effectiveness of past and present stipulations and mitigation in protecting subsistence resources and uses.

1660-085
The historic record of activity and occurrence of oil spills is the data base from which the probability of various spill events can be predicted. Section IV identifies potential impacts to resources from small spills with a higher potential for occurrence, and from low-probability, high effects spill events (Appendix B, Section I.). Analyses of spills that reach the Colville River and Teshekpuk Lake during the open-water season are in Sections IV.B through G.

Based on past patterns of oil spills, the BLM believes tanker spills are representative of the source of a low-probability and extremely large oil spill. Worldwide oil spill statistics (Etkin, 1997) show that spills from pipelines and storage tanks outnumber vessel spills. But, the vessel spills are much larger in size.

1660-086
Section IV.B through G have been revised to address this concern. The section includes an analysis of a 325-bbl oil spill in the Colville River that reaches the coastline.

1660-087
A discussion of the impacts of seawater-pipeline spills has been added to Sections IV.B through G.

1660-088
In Sections IV.B through G, an analysis of a 325-bbl spill reaching Teshekpuk Lake has been added.

1660-089
Effects of activities on fish and corresponding recovery times discussed are based on the studies information cited in the final IAP/EIS. While this information does not establish levels of effects or recovery criteria (too many variables to permit this), there is enough effects-related information to estimate probable effects and recovery times. Effects and recovery estimates also are based on likely occurrences for each proposal and reasonably foreseeable alternatives associated with that proposal. The probable effects of multiple events are discussed in Section IV.H., Cumulative Case.

An event such as the loss of a strong year-class would be of great significance to the recovery of fish populations in the arctic environment. Therefore, it was an evaluation criteria for estimating the recovery periods discussed in the EIS. Regarding recovery in high- and low-density areas, the analysis assumed that a much higher percentage of fish would be unaffected in low-density areas. This is a primary reason for the difference in the level of estimated effects and recovery times for the two areas. Recovery in isolated lakes likely would be a long-term process. However, the probability of isolated lakes being significantly affected by the activities associated with this EIS is very low; effects and recovery times were not estimated.

Because the critical data is lacking for virtually all bird species to support modeled estimates of recovery times from mortality that might occur during specific events (e.g., an oil spill), the estimates are not provided in Sections IV.B.8 or IV.F.8. Based on the assumed population vulnerability of those species most likely to be affected, more than two breeding seasons would be required for recovery. Some species with relatively high fecundity may not require this much time. However, species with low reproductive potential such as loons, or those that are experiencing poor reproductive success, may require a longer period. With the exception of brant and a few others, it is not possible now to accurately model recovery periods.

The direct mortality rate attributable to oil and gas activities is estimated or expected to be small when compared to the size of the mammal populations that occur within the NPR-A. Natural recruitment would replace these mortalities within 1 year or less. For example, take the severe case where it is assumed that 10 polar bears would be killed from contact or ingestion of oil (Sec. IV.F.9.b(2)(c)1), Effects of a Possible Spill in Marine Waters).

The BLM does not expect the loss of 10 polar bears, because a spill in marine waters harms the Beaufort Sea population. This reasoning is based on the following:

1. The number of bears likely to be contaminated probably would be small, even in a severe situation, where a concentration of bears at the site of a whale carcass were contaminated and died.
2. The current growth rate of the Beaufort Sea population of 1,300 to 2,500 bears is about 2.4 percent (USDOI, FWS, 1995). Assuming an equal sex ratio of removed bears, the potential biological removal rate would be 48 bears/year (USDOI, FWS, 1995).
3. Assuming a sex ratio of 2:1 male to female of removed bears and a population of 2,000, the biological removal rate would be about 76 bears/year (Nageak, Brower, and Schliebe, 1991).
4. Assuming a subsistence harvest of 20 to 30 bears/year.

Under these reasonable assumptions, the additional loss of 10 bears is not expected to exceed the potential biological removal rate in addition to the subsistence harvest.

1660-090
Several outcomes may result if birds are displaced from previously occupied habitat. This includes a move to an adjacent or distant optimal habitat that is available, or a move to an adjacent or distant suboptimal habitat that may result in lowered productivity, or not breeding at all in a given season. Observations at Prudhoe Bay (TERA, 1990) concluded that the species studied were not limited by habitat availability because they were found nesting in nearby areas, following construction of a gravel pad. As a result, regional populations of species most likely displaced by construction of facilities are not expected to experience significant declines.

The EIS recognizes that long-term (over the life of the oil fields) displacement of caribou calving could have adverse effects on productivity (see Sec. IV.C.9.a). However, there is no conclusive evidence that the abundance of caribou has been affected, although displacement from calving habitat may represent functional loss of habitat. The same is true for other wildlife populations in the Prudhoe Bay area. The effects of further loss of habitat on caribou is discussed in the Cumulative Effects analysis in Section IV.H.9.a.

1660-091
Statements indicating the expansive range of birds using the Northeast NPR-A Planning Area, types of stakeholders having interests in these birds, and some implications of various international agreements concerning conservation and management of birds have been incorporated into Section III.B.4. Although a statement has been added to each alternative, an assessment of the potential impacts of leasing and development on stakeholder interests would be difficult. At this time, some pertinent information on use of the various species by specific user groups is lacking. With regard to molting geese, the Goose Molting Area is unavailable for oil and gas leasing under Alternatives A through D and the Preferred Alternative, suggesting that potential effects from this activity would not be large enough to affect the use by local or more distant user groups. The conduct of other activities during the period when molting geese are present would be governed by stipulations that would prevent most of the disturbance. If development were to proceed (as in Alternative E), allowing oil and gas leasing in this area, stipulations governing activities during the period when molting geese are present would prevent the disturbance, and the most substantial effects that could affect their availability to user groups outside the NPR-A area. Likewise, a buffer specifying no surface occupancy (Stipulation 45 [Alternatives A-E]) is designated along critical portions of the Colville River to decrease access to the river and potential disturbance of raptors. The BLM does not expect population-level effects on shorebirds or passerines to result from the relatively small areas occupied by oil, gas or other activities; therefore, impacts on stakeholders with interests in these groups are expected to be negligible.

Please see Response 1314-004 regarding the value of brant geese to the subsistence users of the Yukon-Kuskokwim Delta.

As part of the consultation process required under the Endangered and Threatened Species Act of 1973, the NMFS and FWS listed those endangered or threatened species that could be affected along tanker-transportation routes between Valdez, Alaska, and U.S. West Coast ports. A tanker spill along these routes could contain oil from the planning area, if any is found and produced. Oil from the planning area would be a small part of a mixture of spilled North Slope oil that potentially could have a direct effect on the endangered and threatened species listed in Section III.B.6.

1660-092
Without reference to specific statements, it is difficult to determine those the State believes imply that no impacts would occur. As the commenter points out, arctic bird populations exhibit substantial annual variation in numbers. The methods used in some studies have not been sufficiently refined to detect small to moderate changes in abundance. Therefore, the general statement in the document suggesting that impacts and recovery times "... may not be detectable above natural fluctuations of the population and survey methods/data available" is not to imply that impacts would not occur. Instead, the implication is that it would be difficult to determine the impacts (with confidence) for most species given the current data and lack of funds to carry out long-term population monitoring and studies to determine fecundity, survival, productivity, recruitment, etc., for key species.

Those who would use long-term population monitoring and studies data certainly would encourage any effort to obtain information through directed studies and monitoring programs. As described in the Preferred Alternative, an Interagency Research and Monitoring program would be developed to coordinate these studies.

New information obtained from monitoring studies conducted under BLM's Interagency Research and Monitoring Team may identify new concerns or validate potential conflicts. For example, potential diversion of calving caribou from calving habitat north of Teshekpuk Lake during spring migration because of disturbance from potential vehicular traffic between the lake and Kogru Inlet under Alternative E development. However, it would be impossible to set up a specific study to monitor reactions of calving caribou to vehicular traffic in advance of potential exploration and development in the area. The Department of the Interior could require the lessees to conduct or fund studies as a condition of the lease; however, it is uncertain whether the study will verify the potential conflict, or measure its effect on caribou productivity and abundance. The EIS analyzes mitigating measures, such as restricting surface occupancy, in the area between Teshekpuk Lake and Kogru Inlet as a potential condition of leasing in the area. However, some residual displacement of calving caribou is still expected to occur (see Sec. IV.F.9.a(2), Residual Impacts).

Also, please see Response 1815-014.

1660-093
The BLM has not conducted an economic feasibility study of gravel transportation in the NPR-A; therefore, BLM cannot closely define the limits of gravel transportation from existing sites east of the Colville River. Is 20 mi the economic feasibility limit, or is it 30 mi (50% greater)? Certainly, costs and the logistics of gravel delivery increase with distance from gravel mining sites. In Section IV.A.1.b(4), BLM has discussed possible scenarios, including:

1. gravel extraction from existing sites;
2. development of new sand/gravel mine sites within the NPR-A;
3. possible barging of pad construction materials to coastal staging areas;
4. processing bedrock for construction materials;
5. alternative designs (year-round ice pads; composite all-season pads); and
6. reusing gravel from previous Husky drill sites.

Final approved plans for new field development in the NPR-A will depend largely on site-specific conditions and the site location relative to sources of construction materials. The environmental analysis should consider all reasonable possibilities associated with future activities in the Northeast NPR-A Planning Area.

1660-094
The commenter is correct in assuming there would be greater effects on resources with 2 to 10 fields developed versus 1 to 5. However, the former range refers to the multiple-sale scenario, while the latter is the estimate of developed fields for the first sale under Alternative E only; expected number of fields under other alternatives is lower. The text in the EIS has been revised to reflect differences in expected effects.

1660-095
Unfortunately this, and other documents, contain metric and English units. Some units of measurement, such as length, area, or weight, can be expressed in English units. The BLM has reviewed the EIS to ensure these parameters are expressed in English units. However, other parameters such as concentrations, are commonly expressed in metric and this convention is used in the document. Regulatory agencies, including some with the State of Alaska, use this convention to define standards or criteria in the EIS.

1660-096
In planning the EIS, the decision was to have the potential effects of any activity having an impact on a resource analyzed in the first alternative where that activity would occur. In the EIS, the alternatives were presented and analyzed in order of an increasing amount of area available for oil and gas leasing. With an increase in the size of the area, there might be an increase in the oil resources discovered and produced and an increase in the activity levels. The first analysis includes the effects of the activity on the resources(s) and an estimate of the level of effects. The analysis in each succeeding alternative tiers off the first analysis and indicates differences between alternatives. From the first to a succeeding alternative, information about the type and level of activity, assumptions, and type(s) of effects is a summary of the information in the analysis, so there is some repetition. If the information about the type and level of activity, assumptions, and type(s) of effects was not brought forward in a summary, then the reader would have to return to the original analysis to understand the succeeding analysis. Repeating some material was thought to be more reader friendly than having to constantly turn pages back to some starting point.

1660-097
The Conclusion–First Sale in Section IV.F.11 compares the differences between Alternatives E and B. The figures for State revenue (Sec. IV.F.11.b(4)) on the same page of the EIS are for Alternative E only. The draft IAP/EIS Summary document on the Economy uses figures that are for the multiple sales. Economic impacts for multiple sales are two times the impact of the first sale for each alternative.

1660-098
We have revised and clarified the subsistence discussions in Sec. IV. and Appendix D.

1660-099
Noted citations are in the bibliography.

1660-100
Section III.A.1.d has been modified.

1660-101
Section III.A.1.a(4) has been added.

1660-102
The statement has been deleted.

1660-103
We have edited Section II.F to properly indicate when the President's Advisory Council on Historic Preservation should be consulted. The State of Alaska has been represented throughout the process of developing the Draft IAP/EIS and had the entire document available for review for 90 days; we believe that is sufficient time for proper review.

1660-104
Table II.D.2.c-1 includes Cultural Resources.

1660-105
Sections IV.B.2 and 12 reflect this information.

1660-106
The Mesa site and the Utqiagvik site are the two best known archaeological sites in the NPR-A area and both lie outside the planning area. They are mentioned in this section to demonstrate the tremendous length of time of human occupation in the area, the value and the importance of cultural sites likely to be found in the region. The discussion has been revised to clarify this connection. In addition, the section has been revised to briefly describe where reconnaissance surveys have occurred and the types of known sites in the planning area.

1660-107
Please see the changes to Sections IV.B.2 and 12.

1660-108
The text has been changed to reflect this information.

1660-109
Sections IV.B.2 and 12 reflect this information.

1660-110
Please see Section IV.C.12 for a brief explanation of site-specific archaeological surveys. Also, see Preferred Alternative Stipulation 75.

1660-111
An editorial change noted by the commenter has been made.

1660-112
A list (see Table II.F.1) is provided of Federal, State, and North Slope Borough permits and approvals typically required for an oil and gas exploration and a development project on the North Slope. As described in the introductory paragraphs preceding the Preferred Alternative Stipulations (Sec. II.C.7), all stipulations applicable to oil- and gas-related activities will be attached to oil and gas leases issued in the planning area. Permits issued subsequent to leasing must comply with the appropriate lease stipulations. During permit review (for oil and gas activities and other permitted activities), specific lease stipulations will be included as conditions of the appropriate permits. For oil- and gas-related projects, the lease stipulation would be attached to the permits/approvals listed in Table II.F.1. This planning document does not identify which specific stipulations will attach to specific permits.

1660-113
This comment is addressed in Preferred Alternative Stipulation 61.

1660-114
Please see Figure III.A.1.a(2)-1 for the map with the recently added Badami pipeline. By convention, pipelines that have permit approval but are not operational are shown as dashed lines.

1660-115
The abbreviations have been added to the List of Acronyms and Symbols.

1660-116
Section III.C.5.b has the correct citation.

1660-117
Section III.C.5.b.(1) reflects the information in this comment.

1660-118
Section III.C.5.b.(1) reflects the information.

1660-119
Section III.C.5.b(1), paragraph 2, reflects the information.

1660-120
Please see Responses 1334-010 and 1334-011.

1660-121
Section IV.C.15.b, second paragraph, reflects the information.

1660-122
Section IV.C.15.b(1) reflects the information.

1660-123
Sections IV.C.15.b(1) through (10) reflect the information. Where appropriate, specific mitigation measures are identified in the text.

1660-124
The cumulative impact analysis must encompass the period over which actions contemplated in the IAP/EIS might have an impact. Depending on the price of oil, production based on the first sale in the planning area could last approximately 30 to 40 years. Assuming that this IAP/EIS leads to lease sales over the next 10 to 15 years, cumulative impact analysis should be extended to 50 years.

1660-125
This comment is addressed in Section III.C.7.

1660-126
The question of ice-road access between Nuiqsut and Barrow is premature. The BLM and the NSB first must address complicated right-of-way permitting issues across the NPR-A and contentious land planning issues. The question of ice-road access between Nuiqsut and the Dalton Highway is moot because it has been in effect for years. Nuiqsut residents depend on this road to access areas of the North Slope; some drive as far as Fairbanks.

1660-127
Section II.D has been revised to introduce the reader to the Cumulative Case.

Depending on the resource, the scope of the effects may be inconsistent. The cumulative case, (Sec. IV.H), analyzes the effects past and present and reasonable foreseeable future actions that might affect resources in and adjacent to the planning area; these activities are listed in Tables IV.A.5-1a and b. Thus, the effects to resources might occur over an area much larger than the Northeast NPR-A Planning Area. Because oil that might be found in and produced from the planning area would be shipped with other Alaska, North Slope oil from Valdez, Alaska, to refineries along the U.S. West Coast, endangered and threatened species along the

tanker-transportation routes may be affected if there is an oil spill. A BLM consultation (regarding endangered and threatened species) with the Fish and Wildlife Service and the National Marine Fisheries Service requires that an analysis be conducted along the tanker transportation routes (Sec. III.B.6).

1660-128
Please see revised Multiple Sales (Sec. IV.C.3.b).

1660-129
Under Alternative D, areas west and south of Teshekpuk Lake available for leasing (that were not available under Alternative B) appear important to yellow-billed loons (1 of 8 higher concentration areas). As a result of their low population and productivity, concentration areas for five other species would become available; however, populations of these species are not particularly vulnerable. All six species could experience some additional impacts as suggested in the comment. Currently, the BLM lacks information about where development will occur in relation to varying density areas for species that would allow an accurate determination of the impact magnitude. Section IV.E.8.b has been revised to reflect this fact.

1660-130
Although Alternative E allows oil and gas leasing throughout almost all of the Northeast NPR-A Planning Area, which includes the highly valued Goose Molting Area and Colville Raptor, Passerine and Moose Area, Alternatives A-E stipulations would mitigate much of the potential effect of development in these areas. For the Goose Molting Area these include:
(20-I) no heavy equipment activity during the molting period and later;
(21) restricted exploratory drilling during molting season and later;
(25) permanent structures not allowed within buffer surrounding goose-molting lakes;
(30) collocation, integration of facilities;
(33) human activities screened from goose molting lakes;
(34) major construction suspended during molting season;
(50d, 54, 55) ground traffic minimized, helicopter overflights suspended, and fixed-wing flights limited;
(77) off-pad activities prohibited during the molting season;
(22, 32) exploration activity will avoid altering critical goose feeding habitat; and
(60) at abandonment gravel structures made unusable for enhanced access.

In the Colville River Raptor, Passerine and Moose Area these include:
(45) no oil and gas structures except pipelines allowed;
(39) ½ mi setback from Colville and other rivers for surface occupancy
(20b) ½ mi buffer around known raptor nest sites for motorized vehicles during the breeding season; and
(57) aircraft will maintain 1,500 ft AGL within ½ mi of peregrine falcon nests.

Implementation of these stipulations should remove most of the potential for disturbance of molting waterfowl and nesting raptors. Without knowing specific locations of activities/facilities; especially for the multiple-sale scenario, estimates of overall effects are speculative. Because "foreseeable" seems unreachable during this early stage of planning, one conservative approach is to estimate the effects of "reasonably" expected instead of dwelling on the worst case, which is not likely to occur. The BLM believes it is reasonable to assume that adverse effects (caused by a few pad complexes) would be mitigated by the above stipulations. Section IV.F.8.b has been revised to clarify expected effects.

1660-131
Potential effects on geese in the Goose Molting Habitat LU/EA are identified in Section IV.F.8.b. This section notes that impacts would be substantially greater under Alternative E than under Alternative B.

1660-132
Projects considered under the cumulative case occur outside the Northeast NPR-A Planning Area. Such projects are not expected to cause significant changes in bird use or bird habitats in the planning area.

1660-133
Please see Response 1752-039.

1660-134
The comment has been addressed in revisions to Sections IV.B through G.

1660-135
The final IAP/EIS discusses the greater potential for impacts to Spectacled eiders, as more of their habitat is made available to leasing, and the potential impacts of oil spills to bowhead whales, as more coastline is made available to leasing. The BLM believes there is little risk of an oil spill contacting or seriously impacting bowhead whales. Multiple sales are not likely to increase the negligible impact on eiders or bowhead whales.

1660-136
Please see Response 1660-135.

1660-137
This comment regarding effects under the cumulative case is taken out of context. The referenced phrase "limited primarily to occasional disturbance from aircraft activities, resulting in temporary, nonlethal effects" refers to the most likely contribution of proposed activities in the planning area to the Cumulative Case. This is not stated as the primary effects of the Cumulative Case. The IAP/EIS states that the overall effects to spectacled eiders is likely to be substantially greater under the Cumulative Case than for any single activity or any activities associated with any individual lease sale. It further states that disturbance is expected to be unavoidable over the long term, and that mortality could occur as a result of contact with spilled oil and possibly as a result of predators attracted to the facilities. The text in Sections IV.G.10.b(2) has been revised to include the potential effects to spectacled eiders from an oil spill in the planning area and from loss of habitat to be consistent with the FWS March 1998 biological opinion.

1660-138
The BLM believes that if Alternative E is sufficient to displace caribou and make them more difficult for Nuiqsut hunters to pursue (for at least one harvest season), it is logical to expect this condition to occur for the life of the field. The cumulative conclusion does in fact state an escalated effect: "Overall cumulative effects to subsistence harvests are expected to cause one or more important subsistence resources to become unavailable, undesirable for use, or experience population reductions for a period of 1 to 5 years in Nuiqsut." This is the defined "very high" level of effect. Mitigation, actions prompted by Subsistence Advisory Panel oversight, and variations in construction and development activity would tend to mitigate against a constant annual buildup of effects.

1660-139
This species is referred to as Arctic char in almost all the literature cited in the IAP/EIS. Because the majority of those reading an EIS are not systematists, there is a need to continue to use long-established and familiar names for species. The name change is noted in the text.

1660-140
The discussion of habitat types used by birds is adequate for the purposes of this document. Regarding the distinction between habitat types and landcover, the commenter incorrectly states that Markon and Derksen (1994) discuss only remotely sensed landcover types. The two investigators gathered field "ground-truthing" data for three summers; they discuss in detail and provide vegetation profiles and photographs of the habitat types that appear on the satellite images.

1660-141
Section III.B.4.a(5) has been revised to indicate possible origin of molting Canada geese.

1660-142
The bibliography in the draft EIS was incomplete at the time of publication. All cited references will appear in the final EIS bibliography. Regarding eider population trends, while not representing a long-term database, 4 years of data is sufficient to determine a trend during this period of time.

1660-143
The statement: "no data are available for examining overall trends on the North Slope" was taken from the *Spectacled Eider Recovery Plan* prepared by the Fish and Wildlife Service. The statement refers to long-term population data. By comparison, there are population data for the Y-K Delta that date back to the 1960s and early 1970s. These data show a substantial decline in the population from the 1970s to the early 1990s. There are no equivalent data for the North Slope. It would not be possible to estimate population levels on the North Slope in the 1970s from a few years of data in the 1990s.

The order of presentation of Larned and Balogh (1997) and TERA (1995) in Section III.B.6.a.2 has been reversed in the text. The more current survey work by Larned and Balogh (1997) is now presented first. The BLM believes there is a value in presenting information from different studies, because different studies and authors may provide different and sometimes contradictory viewpoints. The text includes a statement that such extrapolation probably is speculative, because the Prudhoe Bay area represents only a small portion of the total spectacled eider habitat on the North Slope, and that densities of eiders in the Prudhoe Bay area are not likely to be typical of the entire coastal plain. The two studies look at different survey areas. The survey effort by TERA concentrates on the Prudhoe Bay area, whereas Larned and Balogh (1997) look at the entire Arctic Coastal Plain. It also should be noted that the 1997 spectacled eider population, after being corrected for visibility, is estimated at 14,300.

The aerial surveys were designed to assess population trends and breeding distribution for spectacled eiders (Larned and Balogh, 1997). Prior to the draft EIS being printed, Mr. Larned reviewed this section, including the sentence in question, and provided the specific information regarding locations where nesting eiders were most abundant.

1660-144
The text was intended to indicate that the Alaskan breeding population of Steller's eiders was listed as threatened. This was stated in the first sentence of the paragraph. Section III.B.6.a(3) has been revised for clarification.

1660-145
Larned (1997) was not published at the time the draft EIS was printed. It is included in the text and reference sections in the final EIS.

1660-146
The legend for cited Figure III.B.4-7 implies no rate function value; the shading indicates the number of young counted on each lake where these counts were made. The figure depicts combined total counts and includes the young of all goose species. However, as the text indicates, the values are dominated by brant and greater white-fronted goose. The legend has been revised.

1660-147
Section IV.B.4.a(3) has been revised in response to the comment.

1660-148
Section III.B.5.a(1)(e) has been revised.

1660-149
Section III.B.5.b(3) has been revised.

1660-150
Section III.C.3 has been revised to reflect comment regarding the State subsistence statute of 1986. The eight major concerns expressed by local Inupiat may not be addressed systematically, but the overall scope of the EIS does address these issues within the analyses for all resources. Proposed stipulations are linked to specific resource concerns in the conclusion for each resource analysis. The subsistence and sociocultural sections make the link between concerns and mitigation. Appendix F discusses the subsistence workshop in Nuiqsut where the creation of a Subsistence Advisory Panel was recommended. The workshop recommended that the proposed panel work on these issues.

1660-151
The collection, evaluation, and application of traditional knowledge was not systematically presented in Section III.C.4.d (Cultural Values). For example, traditional knowledge has for years been omitted from EIS's, an omission that can no longer be made. The BLM attempted to find three or four representative Native comments relating to particular themes and issues raised in the analysis. The intention was to include what the Inupiat people have been saying for many years.

To increase the database of traditional knowledge, the MMS has awarded a contract to UIC in Barrow to make systematic identification, collection, and archival of never-before gathered North Slope traditional knowledge.

Comments in the text are from public hearings conducted on the North Slope since the early 1970's. Traditional knowledge was considered in the conclusions for the subsistence and sociocultural analyses, although it sometimes may be difficult to see the linkage. Section IV.G.13 addresses the concern about cumulative effects not being identified in the proposed stipulations.

See also response to comment 1851-025 and Preferred Alternative Stipulations 59 through 64.

1660-152
Part of the area south and southwest of Teshekpuk Lake lies within the Teshekpuk Lake watershed, and is part of the Teshekpuk Lake Special Area. Section 104(b) of the NPRPA provides that exploration within special areas containing subsistence, recreational, wildlife, historical, or scenic values should be conducted to ensure the maximum protection of such valuables; but that is only to the extent consistent with the requirements of this Act for the exploration of the reserve. The BLM believes the combination of unavailable lands for leasing and the stipulations does provide the maximum protection for wildlife and wildlife habitat in this area, consistent with exploration under this alternative.

1660-153
The bibliography in the draft EIS was incomplete at time of publication. All references cited in the document will be included in the final EIS bibliography.

As the statement concerning potential effects on the few species present in winter indicates, there is little evidence from winter studies and few pertinent references.

Discussion of the potential effects of predators attracted to refuse at facilities is consistent throughout the document.

1660-154
An altitude of 1,000 ft should be adequate to prevent excessive disturbance of spotted seals on land and ringed seals hauled out on ice. Most flights associated with Alternative A are not expected to occur over spotted seal concentration areas shown in Figure III.B.5.b-1, especially those in Smith and Admiralty bays.

1660-155
As suggested by the comment, the paragraph (in question) states that downslope drying of tundra along

gravel roads is possible. However, downslope drying of tundra is unlikely to have a significant issue for water quality. (See Sec. IV.C.4.b(2) and IV.C.3.b(2)) These analyses for water quality and water resources are consistent with findings in the practice, despite the concern about inappropriate placement and poor maintenance of culverts. The primary landscape impacts from gravel roads and pads is flooding and thermokarst, not drying (Walker et al., 1987).

1660-156
The analyses in this document focus on the effects from factors that potentially may affect birds in general, or specific groups of birds instead of specific areas, unless the two are coincident. In addition, the location of oil and gas development sites is speculative. Figure III.A.1.a(3)-11 suggests that most interest will be focused in the northern portion.

1660-157
Section IV.C.8 and other discussions of the Effectiveness of Stipulations in Section IV have been revised.

1660-158
No specific literary reference is given for the statement "caribou exposed to oil development-human activities may be more accustomed to human activities"; such habituation has been observed in the Prudhoe Bay area (Cronin et al., 1994).

1660-159
The EIS recognizes that CAH caribou avoid (3-4 km) habitats near roads (development facilities) on the oil fields in nonriparian areas during the calving season. The use of open tundra instead of riparian areas for calving is generally accepted by biologists (Sec. III.B.5.a). In Section IV.C.9.a, the EIS presents both sides of the issue regarding caribou avoiding the TAPS. Preferred Alternative Stipulation 48 restricts permanent roads within the planning area and connections to the existing road network to the east. Preferred Alternative Stipulations 33 through 36 further limit potential pipeline/road disturbance to caribou.

1660-160
Pipelines may be buried under streams-riparian habitats used by moose. In addition, moose successfully cross the TAPS corridor without any significant effects on their distribution and movements. See Section IV.C.9.a(2)(b)2), Effects on Moose, for a discussion of studies regarding moose movements and the TAPS (Sopuck and Vernam, 1984, 1986; Eide, Miller, and Chihuly, 1986).

1660-161
Section IV.C.9.a(2)(b)3), Effects on Grizzly Bears, has been revised.

1660-162
Section IV.C.9.a(2)(b)6), Effects on Muskoxen: Exploration, has been revised.

1660-163
Oiled fur is not expected to affect adult caribou thermoinsulation, even if the fur is oiled after the caribou shed their summer coats, because the outer guard hairs of caribou are hollow. Few animals would be affected from the small spills (average 4 bbl) likely to occur over the life of the project. No documented caribou deaths have been associated with the numerous spills associated with the TAPS. Section IVC.9.a has been changed in response to this comment.

1660-164
Section IV.C.9.b has been revised. Aircraft disturbance of ringed and bearded seals would occur only if and when aircraft were forced to fly low due to poor weather conditions.

1660-165
Considering the number of fish taken by commercial and subsistence fishermen, measurable impacts on fish on account of construction crews and others associated with oil and gas activities are not expected to occur. The probability of remote areas being fished by those from the oil and gas industry is considered low; especially, when compared to that of those who live within reach of these areas.

1660-166
Table II.D.2.c-1 indicates that the Fish Habitat LUEA is available for oil and gas leasing under Alternative E. Under Alternative D the Fish Habitat LUEA would be available for oil and gas leasing except for that portion within the Goose Molting Habitat LUEA.

1660-167
Without knowledge of the specific pad locations, it would be as erroneous to estimate very large effects by assuming oil and gas development will take place in high bird density areas as to estimate little effect by focusing on low density areas. Without some indication of the location for facilities, BLM finds it difficult to quantify the expected effect. Effects under Alternative D are compared to those under Alternative B with some revisions in Section IV.E.8.b.

Regarding potential effects on spectacled eiders, although Alternative D opens a portion of the Spectacled Eider Breeding Range west of Teshekpuk Lake to oil and gas leasing, indicated in the text as "relatively high density," the primary area of concern is <30 mi^2 in extent and has about 0.5 to 1.6 birds/km^2. At these densities, it does not appear likely that a large number of these eiders would be severely disturbed. However, the nesting efforts of a few birds might be displaced or disturbed sufficiently to be terminated, consequently affecting productivity to a small extent. This is not expected to be a significant result at the population level.

1660-168
Effects of multiple sales on subsistence activities have been added to Section IV.E.13.c(2).

1660-169
Under the development scenario for Alternatives A through E, the BLM anticipates very few permanent roads; those that are constructed will not connect to the existing road network. Stipulation 62 (Alternatives A-E) requires that procedures be developed to restrict access in close proximity to production facilities and the pipeline. Stipulation 76 (Alternatives A-E) restricts the use of oil field facilities by oil company agents and contractors. Preferred Alternative Stipulation 48 restricts permanent road construction in the planning area and prohibits connection to the existing road network to the east.

1660-170
A reference to the effect that "no construction activities are expected to occur in marine waters so no effects in marine waters are anticipated" does not appear in the text. Reference is made to a dock for offloading barge-transported material; this structure is not expected to displace birds enough to cause other than temporary negligible disturbance. At this point, it is unlikely that a causeway would be permitted.

Regarding the extensive review of the Alternative E analysis, (see Response 1660-131) and Alternative D (see Response 1660-130). Restrictions on air and ground traffic during the goose-molting period significantly would decrease the frequency of disturbance. Facilities in interlake areas might be visible to molting geese, but little information is available on the effect of such a presence other than that the geese at Prudhoe Bay seem to adapt. The statement that molting geese cannot be expected to react calmly is not based on information other than that in the alternative.

Although under Alternative E most of the planning area could be offered for oil and gas leasing, the numerous stipulations place considerable restriction on activities in the Goose Molting Habitat and Colville Raptor, Passerine, and Moose LUEA's during critical periods. References to information presented at the waterfowl and caribou workshop (Appendix E) have been incorporated.

1660-171
The effects on moose, grizzly bears, and muskoxen are described in Section IV.C.9.a under Alternative B. Under Alternative E, these effects are expected to be about the same as under Alternative B. The focus of the analysis for this alternative is on caribou, because the area leased under Alternative E includes all of the Teshekpuk Lake caribou herd calving area. Moose and muskoxen occur south of this area, and leasing under Alternative B would cover the effects on these species.

1660-172
Oil-field activities and materials that would affect the water quality of areas proposed to be leased are discussed under the appropriate alternative. For example, oil spills and seawater spills on water quality are discussed under each alternative.

1660-173
The primary effect of increased access to grizzly bear habitat in the Cumulative Case would be the loss of bears due to adverse interaction with humans, whether dens are disturbed or not. These effects on grizzly bears are discussed in the cumulative analysis in Section IV.H.9.a(5), Overall Cumulative Effects.

1660-174
Please see Response 1658-068.

1660-175
Cumulative effects of marine mammal populations that occur adjacent to the NPR-A include commercial fishing and subsistence harvests. These marine mammal populations migrate into areas where they are affected by these activities. Because NPR-A oil would be transported by the TAPS to Valdez and tankered through Prince William Sound, other marine mammal species such as sea otters and harbor seals (affected by the *Exxon Valdez* oil spill) could be affected by NPR-A oil and by commercial fishing in the Gulf of Alaska.

1660-176
The conclusion in Section IV.H.13 describes the cumulative effects of oil and gas activities on subsistence-harvest patterns. The section includes relevant information from the sections on Sociocultural Systems and Coastal Zone Management.

1660-177
The BLM concurs with the recommendation that the State, Federal Agencies, and the NSB develop a process that would systematically evaluate mitigation effectiveness. See Sections II.F.6 and 7.

1660-178
Most marine vessel traffic, such as barges carrying equipment and supplies, would be relatively near to the shore where there would be few (if any) bowheads as opposed to traveling farther offshore through the bowhead's main migration corridor. Consequently, we believe that any disturbance associated with marine-vessel traffic is likely to be very minimal and very localized. The BLM believes there is no need to develop timing restrictions on the limited amount of vessel traffic traveling near the shore. Any need for such restrictions will be evaluated further when the biological opinion is received from NMFS for the ESA Section 7 consultation.

1660-179
Section IV.K.8 indicates the potential for abandonment of a small portion of the goose-molting habitat. However, facilities are not expected to be placed in critical areas where either long-term abandonment (life of the field), unsuccessful removal, or rehabilitation would cause permanent abandonment; also see Stipulation 25 and 32 (Alternatives A-E).

1660-180
The potential effects of oil-pipeline construction and operations on the resources in and adjacent to the Northeast NPR-A Planning Area have been analyzed in Sections IV.C through G and in the Cumulative Case, Section IV.H. Many effects would be the same for a gas pipeline except for a potential oil spill. The analysis of the effects of gas pipelines is tiered from the analysis in the EIS sections noted.

If and when it becomes economical to export from the North Slope, any gas production and transportation development would require legal authorization, environmental analysis, and a review. Specific information about pipeline routes, roads (if new construction is necessary), associated facilities, and potential effects would be addressed in documents that may be required for such a project.

1660-181
The use of "temporary" to describe the period during which particular effects will be evident generally does not imply for the life of the field. Instead, it implies until an adjustment is made by the affected individual(s); for example, movement of a breeding bird to adjacent suitable habitat if a structure is located in its usual area. The activity could result in a delay or loss of productivity for that year and still be considered temporary at the population level. Any loss of habitat could be considered permanent, if the offending structure is not successfully removed or the area rehabilitated. Usually, the loss of habitat would not be considered a permanent loss of productivity.

1660-182
Section II.F.7 proposes creation of an Interagency Research and Monitoring Team to coordinate the respective agencies' research and monitoring efforts and to offer advice to lessees on research and monitoring. The team will consult with the Subsistence Advisory Panel in designing research and monitoring efforts.

1660-183
The document has been reviewed and cited references are included in the Bibliography.

AMERICAN BIRD CONSERVANCY
CONSERVING WILD BIRDS AND THEIR HABITATS THROUGHOUT THE AMERICAS

1661

March 4, 1998

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RE: NPR-A Draft Integrated Activity Plan/
Environmental Impact Statement

Dear Mr. Terland:

The American Bird Conservancy wishes to provide the following comments on the Draft Northeast National Petroleum Reserve-Alaska (NPR-A) Integrated Activity Plan/Environmental Impact Statement. The American Bird Conservancy is a private, non-profit organization dedicated to the conservation of birds in the Americas. ABC's Policy Council has 70 member organizations including the Environmental Defense Fund, National Wildlife Federation, National Audubon Society, Defenders of Wildlife, American Ornithologists Union, and the Peregrine Fund. We are the U.S. affiliate of Bird Life International and have partner organizations in 78 nations.

Many of our member organizations' representatives enjoy viewing and studying the millions of birds migrating each year from Arctic nesting, molting, and staging areas to feeding stopovers and wintering areas in the continental U.S. and elsewhere in the world. Our members have a keen interest in what happens to critical bird habitats in NPR-A. We submit these comments to express our concerns over the serious disruption of critical habitat for many avian species. Both the Hawk Mountain Sanctuary and New Jersey Audubon Society have asked us to add their names to this letter.

GENERAL COMMENTS.

Oil leasing and development in NPR-A may greatly affect the public values of migratory bird resources well beyond the North Slope, yet the Bureau of Land Management fails to fully describe the relationship of the birds using the Northeast planning area with their breeding and wintering ranges. The lack of impact analysis regarding the national and international values of waterfowl, shorebirds, and other birds is a major deficiency in the NPR-A Draft EIS (DEIS). We are particularly concerned that the DEIS fails to adequately discuss how U.S. obligations under international treaties and agreements for the protection of shared resources will be met by the proposed management alternatives. The DEIS also neglects to discuss the effects of industrial development in NPR-A on regional agreements such as the Yukon-Kuskokwim Delta Goose Management Plan and waterfowl flyway management plans. 001 002

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We are concerned that oil and gas leasing and development in the National Petroleum Reserve-Alaska pose a wide array of potentially significant adverse effects to bird populations and the ecosystems they rely on for critical stages in their life cycle. The fast-track planning process has not given adequate scientific study or thorough impact assessment on the range of issues that may adversely affect the diversity of migratory birds and their habitats. No new field studies on birds were conducted for this DEIS and much of the information relied upon, even for rare and endangered species, was decades old. The DEIS fails to disclose a host of negative direct, indirect, and cumulative effects to birds and their habitats from roads, gravel mining, contaminants, and the duration or intensity of potential aerial and ground disturbances. Furthermore, there is no supporting scientific evidence provided for the conclusions regarding impacts to birds, nor evidence that a comprehensive literature review of the relevant data on bird resources was done. 003 004

We are concerned that adequate analysis of impacts of industrial development on a wide diversity of neotropical migratory birds and their habitats was not completed for this DEIS, despite the significance of the planning area for bird nesting and migratory staging. Within the NPR-A, all 13 of the vertebrate species ranked by the Alaska Natural Heritage Program as facing imminent or long-term population threats are birds: Spectacled Eider, Steller's Eider, Black Guillemot, Buff-breasted Sandpiper, Red Knot, White-rumped Sandpiper, Bar-tailed Godwit, Stilt Sandpiper, Baird's Sandpiper, Yellow-billed Loon, Bluethroat, Arctic Peregrine Falcon, and Gyrfalcon (Wilbor, 1997). Although the NPR-A comprises a significant portion of the breeding range for these species in Alaska, there is little or no information on habitat use and distribution for six of these species in NPR-A. This basic scientific information is needed in order to conduct a meaningful assessment of potential impacts of oil leasing. 005

There is reason for concern about the negative effects on neotropical migrants from oil field roads and other habitat loss because declines have been documented for such habitats that are scarce in the region. The DEIS fails to present existing scientific data on decreased nesting or breeding season densities due to Prudhoe Bay roads for birds including Lesser Golden-plover, Semipalmated Sandpiper, Pectoral Sandpiper, Dunlin, Stilt Sandpiper, Buff-breasted Sandpiper, and Red Phalarope (Troy, 1993). Semipalmated Sandpiper nesting density declines of 40% next to major oil field roads have been documented (Troy, 1993). Although the DEIS claims that there will not be an extensive road network built for NPR-A oil fields, this assumption seems unrealistic based on past practices, and potential effects of such significance should not be ignored. 006 007

The American Bird Conservancy recognizes the international significance of the Teshekpuk Lake and Colville River Special Areas for migratory birds and other wildlife. The Teshekpuk Lake Special Area has especially high values to migratory birds and caribou. The Colville River Special Area, together with the tributary Kikiakrorak and Kogosukruk River systems, supports remarkable concentrations of songbirds and birds of prey. This Colville River Area is amongst the most important breeding habitats for raptors in North America. The special natural values of

these areas and potential negative effects of oil development were not adequately described by the DEIS, as we outline below in greater detail.

We find that a prescription for permanent protection of sensitive wildlife habitats is lacking from the DEIS alternatives. The two Special Areas within the planning area were recognized by Congress for their special importance in 1976 and were established by the Interior Secretary in 1977. The sensitive and threatened species associated with the Teshekpuk Lake Special Area, along with its significance to large numbers of nesting and molting waterfowl-- including the unique molt migration area for the Pacific Black Brant population--warrants prohibition of leasing and all industrial activities in the Special Area. The ecosystem of the Colville River and its major tributaries, the Kikiakrorak and Kogosukruk, deserves more substantial protection from industrial activities than the narrow strip proposed for no leasing in the DEIS. 008

We find that a full range of alternative management actions has not been proposed in the DEIS; most notably none would offer permanent protection to the internationally significant bird habitats in the Teshekpuk Lake and Colville River Special Areas, and other important bird habitats. Therefore, we urge the BLM to adopt a new alternative with no leasing and providing permanent protection to these Special Areas and the Kikiakrorak and Kogosukruk River systems.

SPECIFIC COMMENTS.

Teshekpuk Lake Watershed - waterbird nesting. The Teshekpuk Lake watershed and other coastal plain wetlands provide nesting habitat for Northern Pintails, Oldsquaw, King Eiders, Black Brant, Greater White-fronted Geese, Canada Geese, Tundra Swans, and three species of loons (Pacific, Red-throated, and the rare Yellow-billed). The Teshekpuk Lake Special Area encompasses the major calving grounds for the 25,000 animal Teshekpuk caribou herd. Most of the existing breeding habitat for the Spectacled Eider is found within the NPR-A and areas of higher concentrations are found within the Teshekpuk Lake Special Area. Although there have been annual breeding pair surveys done by the U.S. Fish and Wildlife Service that have collected data on this species, there have not been recent ground nesting surveys within the NPR-A. Furthermore, the results of an on-going analysis of the relationship between mapped vegetation types and the breeding pair data being conducted jointly by the BLM and U.S. Fish & Wildlife Service has not been completed

Teshekpuk Lake Special Area- goose molting. The molting habitat found in the Teshekpuk Lake wetlands is unique and has international significance. This area has been formally designated as an Important Bird Area by American Bird Conservancy. We are especially concerned about the potential impacts of oil development to Pacific Black Brant because this species is threatened by human disturbance and development throughout its range in the U.S., Canada, and Mexico. During the 1950's and 1960's, human harassment and disturbance from hunters and others were related to the displacement of wintering populations of Brant from bays in California, Oregon, and Washington (Denson and Murrell 1962, Einarsen 1965, Chattin 1970, Smith and Jensen 1970, Henry 1980; cited by Ward and Stehn, 1989). At present, the major fall staging area at Izembek National Wildlife Refuge along Alaska's coast is also threatened by potential

Congressional action to allow a proposed road through critical feeding habitats. Each year, nearly 22% of the world's Pacific Brant population migrates to molt in the Teshekpuk Lake area, fattening up on lush wetland plants next to large deep lakes (King and Hodges 1979; Bollinger and Derksen 1996). The Teshekpuk area is also an important molting area for Greater White-fronted Geese, Canada Geese, and Snow Geese. An average of 37,000 geese of these 4 species use the area annually (King, 1997). There is no other comparable area with the combination of low-lying lakes, lush vegetation and freedom from disturbance available to this Brant population along Alaska's northern coast (Weller et al. 1994). Biological research carried out since the last NPR-A lease sales has further documented the critical importance of this area to Black Brant, other waterfowl, and caribou. Studies of disturbance to Brant now provide even more reason for concern about the potential effects of oil exploration and development in this unique migratory molting area, contrary to the unsubstantiated conclusions of the DEIS. Intensive studies on Brant habitat use, energetics and disturbance were conducted by the U.S. Fish and Wildlife Service and university biologists during the late 1980's (Bollinger and Derksen 1996, Jenson 1990, Miller 1994, Taylor 1993, Weller et al. 1994). These studies further documented the sensitive nature of these unique wetlands, their importance to the entire Pacific Brant population, and the susceptibility of Brant to disturbance from helicopters and ground disturbance (Derksen et al. 1979, 1982; Jenson 1990).

Studies documenting significant behavioral effects to Brant from helicopter overflights (Derksen et al. 1992) found that molting Brant did not habituate to repeated aircraft disturbances (Jensen 1990). A scientific model developed for this area found that up to 25% of the flightless, molting population could experience weight-loss which in turn could affect their migration success (Miller 1994). Other studies have documented that Brant are sensitive to fixed-wing aircraft, as well as helicopters, and to human ground disturbances (Ward and Stehn, 1989). In the event that oil fields are developed without connecting roads, there will be greatly increased levels of aircraft access needed compared with existing North Slope oil fields. This increased air traffic has not been adequately analyzed in the DEIS. Furthermore, the DEIS fails to discuss differences in the potential energetic consequences of disturbance to the Pacific Black Brant population, which undergoes a lengthy molt migration (Owen, 1980) to reach the Teshekpuk Lake area compared with studies of North Slope nesting Brant. 009

In addition to the effects of disturbance and oil pollution, major modifications of wetlands hydrology through road building, water use, gravel mining at the lake shores, or flooding are likely to induce major morphological changes in the lake systems (Weller and Derksen 1979). Although there have been some technological advances in oil field developments, there is no evidence that the fundamental risks from habitat fragmentation, degradation of feeding habitat quality, and ground and air disturbance could be acceptably reduced.

The DEIS fails to provide scientific documentation or adequate rationale that leasing could be allowed in Teshekpuk Lake Special Area "in a manner which will assure the maximum protection of such surface values to the extent consistent with the NPR-A of 1976." The stipulations are inadequate mitigation because they can be waived or exempted even in the goose 010 011

molting areas. In fact, there are no prohibitions against building pipelines across the prime goose feeding grounds. Roads, airports, gravel mines, docks, processing plants and other facilities are not strictly prohibited in the Teshekpuk Lake Special Area. Therefore, to ensure maximum protection of these internationally unique resources, as is required by the National Petroleum Reserves Production Act, we recommend prohibiting leasing and all industrial activities in the Teshekpuk Lake Special Area. 011

Colville River Special Area. The spectacularly wild Colville River is the largest of the rivers flowing to the Arctic Ocean in Alaska. It has spectacular cliffs and a huge riparian area which attracts much wildlife. The Colville River, together with the tributary Kikiakrorak and Kogosukruk River systems, supports remarkable concentrations of songbirds in riparian willow thickets and birds of prey. The raptors include sixty nesting pairs of Arctic Peregrine Falcons, up to thirty nesting pairs of Gyrfalcons, and 100 pairs of Rough-legged Hawks, all nesting in diverse sites on the well-developed bluffs. These are among the best nesting sites on the North Slope. The Colville River continues to support a substantial portion of the Arctic Peregrine Falcons nesting in the U.S. and all Gyrfalcons nesting in the U.S. The Colville and these tributaries also provide important habitat for moose, brown bears, wolves, and wolverines and at least twenty species of anadromous and freshwater fish. It is vital for subsistence and is a spectacular scenic area with tremendous recreation values for remote, wilderness experiences. The Colville River should be recommended for "Wild River" designation to Congress, as that could give some measure of interim protection, but permanent protection is also needed beyond the 1/4-1/2 mile strip of land proposed by the DEIS. We recommend no leasing and permanent protection for the entire special area in order to provide an adequate buffer between these bird habitats and oil and gas development. We are particularly concerned about the potential demand for gravel from the Colville River floodplain, as there are few identified gravel sources within NPR-A. Also of serious concern are the cumulative effects on critical riparian bird habitats from adjacent habitats outside the NPR-A boundaries.

CONCLUSIONS.

In conclusion, we recommend major revisions to the integrated activity plan/environmental impact statement in order to adequately protect migratory bird resources. We have suggested inclusion of scientific literature reviews and impact analysis and new plans for management actions. We urge you to support a new alternative that would provide permanent protection to the Teshekpuk Lake and Colville River Special Areas, plus the Kikiakrorak and Kogosukruk River systems, in order to adequately protect internationally significant bird habitats.

Sincerely,

George H. Fenwick

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1661-001
Concerns regarding treaty obligations and interests of stakeholders outside the Beaufort Sea region are addressed in Response 1450-001. Text regarding this topic has been added to Sections III.B.4 and IV.C.8.b(5).

1661-002
Please see Response 1661-001.

1661-003
We believe that the schedule for producing the IAP/EIS has afforded adequate time to analyze the resources, the uses of the planning area, the impacts future activities may have on them, and to gather and consider public input.

1661-004
Potentially adverse effects from the presence of roads, gravel mining, oil contamination, and aerial and ground disturbances are discussed in Sections IV.B.8, IV.C.8, IV.F.8, and IV.G.8. Conclusive evidence for these effects, or the comprehensive information that would allow their accurate determination is lacking for most species. A thorough literature review was undertaken to support the statements in these sections; however, references with peripheral information or that duplicate other works are not cited in the interest of making the document more readable by eliminating long sequences of citations.

1661-005
Bird species that are considered unlikely to breed in the Northeast NPR-A Planning Area or of probable rare occurrence were not included in our analysis. The red knot, white-rumped sandpiper, and bluethroat generally are listed as casual visitant, accidental, or uncommon migrants (Derksen, et al., 1981; Johnson and Herter, 1989), and observations generally are more common west of the northeastern NPR-A area. Given this low level of occurrence, it is unlikely that oil and gas activities would cause adverse effects to more than an insignificant proportion of the population. Black guillemots are marine birds and thus not likely to be adversely affected by primarily onshore activities. They are uncommon except at Cooper Island to the west, where their presence has been artificially enhanced. Substantive biological information is scant for many species that occur on the arctic plain, although those that occur in the area from Teshekpuk Lake to east of Prudhoe Bay have received comparatively greater attention. Additionally, environmental assessments as required by NEPA will be conducted in the future when site-specific exploration and development proposals are made.

1661-006
The information cited regarding the lack of analysis on the effects of road presence on various shorebird species is in Section IV.C.8.b.

1661-007
It is impossible to accurately predict the scale of development in the NPR-A before conducting an extensive exploration program to discover commercial-sized fields. Our resource assessment has indicated that a relatively small number (<5 fields) is expected to result from the first phase of exploration if the entire NPR-A area is open. The average expected size of future commercial oil fields is approximately 250 MMbbl (see Tables IV.A.1.b-4 through b-7). With fields of this size, many cost-savings strategies will be employed to make any discovery economically viable. One important cost-saving strategy is to minimize construction costs by designing small production pad footprints and no permanent gravel roads. A gravel road network throughout the NPR-A is very unlikely because of modest expected field sizes, wet-tundra terrain, and the lack of known gravel sources. The Preferred Alternative stipulation 48 imposes significant restrictions on gravel road construction in the planning area. Past practices on the North Slope are not a good indicator of future development strategies in the NPR-A. The scale of expected development in the NPR-A is many times smaller than the existing infrastructure (older technology) supporting the production of 17 Bbbl of oil in the core area of the North Slope.

1661-008
Please see Response 1851-058.

1661-009
We believe that effects of air traffic are discussed in Sections IV.B.8.a(2) and IV.C.8.b(1)(b), citing the same references that are given in the comment. There is little doubt that air traffic will increase if oil and gas development occurs. It is likely to mainly be fixed-wing, which is less disturbing to geese than helicopters, and any estimates of the quantity of air traffic at this point would be speculative. The EIS discusses energetic consequences of disturbance (Sec. IV.C.8.b(1)). A model that estimates the immediate effect of disturbance (weight loss) has been calculated only for brant. The ultimate effect of such loss on survival, successful migration to their staging or wintering areas, or recruitment of subadults into the breeding population is considerably beyond the capability of current datasets; hence, the lack of such discussion in this EIS.

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1661-010
The Preferred Alternative would not allow oil and gas leasing in the northern portion of the Teshekpuk Lake Special Area, including the Goose Molting LUEA. The Alternative would prohibit permanent oil and gas facilities in that and adjacent portions of the Special Area. For additional discussion of the effectiveness of stipulations, see Response 1664-028. For additional discussion of "maximum protection," see Response 1851-056.

1661-011
The Preferred Alternative prohibits leasing in nearly all of the Goose Molting LUEA for the life of the IAP. No oil and gas exploration or development activities or construction of facilities such as pipelines is allowed in this area. Permanent facilities within the remaining portion of the Teshekpuk Lake Special Area are specifically restricted by Preferred Alternative Stipulations 27, 29 through 48, 67, 70, and 78.

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1662

March 12, 1998

NPR-A Planning Team
Bureau of Land Management
Alaska State Office
222 West Seventh Ave.
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ARCO Alaska, Inc. ("ARCO") submits the following Executive Summary of our comments on the Bureau of Land Management's ("BLM's") "Draft Integrated Activity Plan/Environmental Impact Statement" ("DEIS") for the Northeast Planning Area ("Planning Area") of the National Petroleum Reserve in Alaska ("Petroleum Reserve"). ARCO's detailed comments follow this Executive Summary.

The Petroleum Reserve was established for the purpose of oil and gas exploration, development and production. The Petroleum Reserve was established over 70 years ago and has undergone several periods of exploration and drilling in response to Presidential, Congressional and federal agency actions. Over 18,000 miles of seismic data have been acquired and more than 100 exploration and appraisal wells have been drilled within the Petroleum Reserve.

The hydrocarbon potential of the Alaska Petroleum Reserve has been confirmed by recent exploration success on the North Slope. Although no commercial oil fields have yet been found in the Petroleum Reserve, lower costs, new geologic concepts and new technologies like 3D seismic and extended reach drilling have combined to lower the size at which oil fields are commercial and to lower the exploration risk in finding the fields. It is very likely that if leasing is resumed in the Petroleum Reserve, exploration programs will enjoy similar success to that enjoyed elsewhere on the North Slope in the past ten years, where one in three prospects has yielded a discovery and more than 1.6 billion barrels of oil have been found.

Oil exploration, development and production is compatible with wildlife, habitat and the traditional uses of the land found within the Planning Area. ARCO believes that by using appropriate new operational technology, combined with the over 80 proposed stipulations in the DEIS, that oil and gas can be extracted from any part of the Planning Area without harm to fish and wildlife populations and without interruption of the traditional uses of the land. During the past 25 years, studies have

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generated extensive and detailed information on the effects of oil and gas production on the behavior of arctic fish and wildlife, and on their habitats. The knowledge gained from these studies has enabled government to prescribe specific operational requirements and restrictions to eliminate detrimental impacts.

The proposed deletions in Alternatives B, C and D significantly reduce the chance of a commercial discovery of oil and gas. The Planning Area represents only 20% of the entire area of the National Petroleum Reserve. It is particularly important that BLM include in the first lease sale the high prospectivity acreage that occurs in a 25 mile wide strip of land along the coast. During the exploration that has been conducted on the North Slope over the past 10 years, all commercial hydrocarbon discoveries have occurred within 25 miles of the coast. Conversely, none of the exploration in areas South of the 25-mile line since 1950 has yielded commercial quantities of oil or gas. Exclusion of this high prospectivity acreage from the land available for leasing will sharply diminish the chances of new oil and gas production from the National Petroleum Reserve.

Resumption of oil and gas leasing in the National Petroleum Reserve Alaska will create significant benefits for the local, state and national economies. Potentially significant bonus bids, rents, royalties, corporate and other taxes will be paid to both the state and federal governments as the result of a lease sale and production of hydrocarbons. Significant property taxes will be paid to the North Slope Borough. In addition, jobs and business opportunities will be created on the North Slope, in Alaska and throughout the U.S. ARCO believes that domestic oil production is vital to our economy. Exploration and development in prospective areas like the Petroleum Reserve is necessary if the U.S. is to continue to produce a significant portion of the oil it consumes. Because the exploration and development in this more remote area is likely to take a decade or longer to complete before production can commence, it is necessary that BLM act now so that oil production may commence early in the next century.

In conclusion, BLM should resume leasing in the entire Planning Area. ARCO believes that the legal, environmental and geologic data available to the BLM justifies the selection of Alternative E.

Thank you for this opportunity to comment.

Sincerely,

Michael A. Richter
Vice President
Exploration & Land

COMMENTS

OF

ARCO ALASKA, INC.

March 12, 1998

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ARCO Alaska, Inc. ("ARCO") submits the following comments on the Bureau of Land Management's ("BLM's") "Draft Integrated Activity Plan/Environmental Impact Statement" ("DEIS") for the Northeast Planning Area ("Planning Area") of the National Petroleum Reserve in Alaska ("Petroleum Reserve").

A. Congress Has Mandated Expeditious Oil And Gas Development In The Petroleum Reserve

The Petroleum Reserve encompasses approximately 37,000 square miles (23 million acres) on the North Slope of Alaska. In 1923, by Executive Order, President Harding set aside or "reserved" the public land within the present boundaries of the Petroleum Reserve for the purpose of oil and gas production, but only for military use during wartime by the United States Navy.[1] For this reason, the Petroleum Reserve was originally known as the "Naval Petroleum Reserve in Alaska." The Petroleum Reserve was the fourth area so "reserved."

In 1976, the Naval Reserves Production Act of 1976 ("the Production Act")[2] transferred jurisdiction over the Petroleum Reserve from the Navy to the Department of the Interior ("DOI") which renamed the Petroleum Reserve the "National Petroleum Reserve in Alaska." The Production Act mandated development of the four naval petroleum reserves "in a manner consistent with the total energy needs of the Nation . . . ."[3] The Production Act lifted the restrictions that prohibited production for purposes other than wartime use and directed the Secretary of the Interior to maximize production from the three reserves located in the contiguous United States.[4] Recognizing that development of the Alaska Petroleum Reserve would not be feasible for several years because of the absence of transportation,[5] Congress withdrew all land located within the Petroleum Reserve "from all forms of entry and disposition" under the public land and mineral leasing laws[6] and required extensive study and exploration of the Petroleum Reserve's petroleum, environmental, wildlife and scenic resources.[7] In the interim, the Production Act expressly prohibited any "development leading to the production of petroleum from the reserve . . . until authorized by an Act of Congress."[8]

In 1980, as part of President Carter's policy to accelerate domestic oil production, the DOI Appropriations Act rescinded the withdrawal of Petroleum Reserve lands, lifted the ban on activities related to petroleum development and directed DOI to conduct "an expeditious program of competitive leasing of oil and gas" in the Petroleum Reserve.[9] The DOI Appropriations Act also provided that the detailed studies conducted pursuant to the Production Act would satisfy the requirements of the National Environmental Policy Act ("NEPA") for the first two million acres proposed to be leased.[10]

BLM conducted its first and second lease sales in 1982 and 1983, respectively. Because subsequent sales were not exempt from NEPA compliance, BLM initiated an

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1 Exec. Order No. 3797-A (Feb. 27, 1923).

2 Pub. L. No. 94-258, 90 Stat. 303 §§ 101-107 (codified as amended at 42 U.S.C. §§ 6501-6508).

3 H.R. Rep. No. 81, pt. 1 at 2 (1975), *reprinted in* 1976 U.S.C.C.A.N. at 492.

4 Pub. L. No. 94-258 § 201, 90 Stat. 303, 307-08 (1976) (amending 10 U.S.C. § 7422).

5 H.R. Rep. No. 81, pt. 1 at 8 (1975), *reprinted in* 1976 U.S.C.C.A.N. at 498.

6 42 U.S.C. § 6502.

7 42 U.S.C. § 6505(b), (c).

8 42 U.S.C. § 6504(a).

9 Pub. L. No. 96-514, 94 Stat. 2957, 2964 (1980) (codified at 42 U.S.C. § 6508).

10 Id.

Environmental Impact Statement ("EIS") for additional oil and gas leasing in the Reserve.[11] The preferred alternative identified in the Final EIS was to conduct five additional sales between 1983 and 1987 of an average of two million acres per sale.[12] The preferred alternative also identified several environmentally sensitive areas to be deferred or deleted from leasing.[13] The third sale was held in July 1983. In July 1984, a fourth sale offering 64 tracts totaling 1.5 million acres attracted no bids and a fifth Petroleum Reserve sale scheduled for 1985 was canceled. All leaseholds in the Petroleum Reserve have now expired.

Although the state of the art in nil exploration in the early 1980s did not result in the discovery of commercial quantities of oil, new techniques, such as 3D seismic, as well as more efficient production techniques, increase the likelihood that commercial quantities of hydrocarbons can now be found.

B. Oil And Gas Development In The Petroleum Reserve Will Have Significant Economic Benefits

The United States economy will benefit significantly from additional domestic oil production. Slightly lower U.S. crude oil production combined with a strong increase in oil demand led the United States to import 8.5 million bbl/d of oil (on a net basis) in 1996. During the first 8 months of 1997, U.S. net imports of crude oil and refined petroleum products were 9.0 million bbl/d, up 4.7% from the same period in 1996. These oil imports represented 48% of U.S. oil consumption.[14]

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11 See Final EIS Petroleum Reserve.

12 Final EIS Petroleum Reserve at v.

13 See Final EIS Petroleum Reserve, Plate 1.

14 U.S. Energy Information Agency, Country Analysis Briefs, United States of America.

Without question, this level of dependence on foreign oil is inconsistent with the United States' national security interests. In a March, 1998 special report published in *Scientific American*, Campbell and Laherrere conclude,

> "Meanwhile global demand for oil is currently rising at more than 2 percent a year. Since 1985, energy use is up about 30 percent in Latin America, 40 percent in Africa and 50 percent in Asia. The Energy Information Administration forecasts that worldwide demand for oil will increase 60 percent (to about 40 Gbo a year) by 2020.
>
> The switch from growth to decline in oil production will thus almost certainly create economic and political tension. Unless alternatives to crude oil quickly prove themselves, the market share of the OPEC states in the Middle East will rise rapidly. Within two years, these nations' share of the global oil business will pass 30 percent, nearing the level reached during the oil-price shocks of the 1970s. By 2010 their share will quite probably hit 50 percent.
>
> The world could thus see radical increases in oil prices."

Similarly, it is abundantly clear that American dependence on foreign oil plays a significant role in recent trade deficits. In 1996, the United States ran a trade deficit of $161.9 billion; the value of oil imported during that period was $66 billion.[15] There will also be direct substantial economic benefit to the U.S. Treasury through the equal sharing of bonus bids, rentals and royalties with the State.

The State of Alaska will benefit from additional oil production. BLM has estimated that making the entire Planning Area available for lease will have the following economic benefits for the State of Alaska.

Revenue - $2.5 - 10 million in annual royalty revenue

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15 U.S. Energy Information Agency, Country Analysis Briefs, United States of America.

- Taxes - $1.5 - 3 million in property taxes and $1.25 - 5 million in severance taxes annually
- Jobs - 10,500 - 21,000 jobs during 7-year exploration and development phases (DEIS page IV-F-19)

The North Slope Borough will benefit from increased oil production. The BLM has estimated that making the entire Planning Area available for lease will increase North Slope Borough taxes annually by $6 – 12 million and provide significant job opportunities to the North Slope Borough residents. In addition, Barrow has received significant benefits from earlier gas discoveries in the Petroleum Reserve, which now supply that community.

Production from existing North Slope oil fields is currently in decline. From the time that the first production well was drilled at Prudhoe Bay through the end of 1996, the North Slope has produced 11.343 Bbbl of oil. DEIS at III-39. Fields located on the North Slope account for more than 25% of all domestic oil production. DEIS at III-A-2. Alaskan crude oil production is expected to fall by around 7% in both 1997 and 1998. This represents the continuation of a trend which began in 1991.[16]

Leasing must begin now in order to maximize the likelihood that additional discoveries will be on line early in the next century. Additional discoveries are needed to provide the continued employment and economic benefits upon which Alaska and its rural populations depend. Moreover, it is critical to bring additional discoveries on line in order to maximize production from existing fields and to ensure efficient use of existing infrastructure.

Additional oil production will support continued operation of existing fields at Prudhoe Bay and Kuparuk and efficient use of Trans-Alaskan Pipeline infrastructure. The

[16] U.S. Energy Information Agency, Country Analysis Briefs, United States of America.

Trans-Alaska Pipeline System ("TAPS") achieved maximum daily throughput capacity of over 2.0 MMbbl in 1988; currently the TAPS throughput is approximately 1.35 MMbbl per day. III-A-3-5. The lower mechanical and economic limits for viable TAPS operation are between 200,000 and 500,000 bbl per day. "[B]ased on the declining production trends of existing North Slope fields, and without changes to economic conditions or the discovery of major new oil fields, the operational limits of TAPS could be reached within the next 20 years . . . . Renewed interest in the Petroleum Reserve is an important part of strategies to maintain the TAPS throughput within acceptable limits." DEIS at IV-A-20-21. The production forecast for remaining reserves in known and developed North Slope fields is estimated to be between 7.85 Bbbl and 15.95 Bbbl. DEIS at IV-A-39.

The Petroleum Reserve has frequently been identified by environmental groups as an alternative to the Arctic National Wildlife Refuge. In arguing for restrictions on leasing in the Petroleum Reserve, "environmental groups will be somewhat hamstrung by their own arguments in the fierce political battles of recent years over the Arctic National Wildlife Refuge, a similarly vast stretch on the Arctic Ocean to the reserve's east. To block oil companies' ambitions to drill there, environmentalists have often contended that the refuge should be spared because there is less sensitive land nearby that is already designated an oil reserve." Carcy Goldberg, "Turmoil Beneath a Land's Tranquility," The New York Times, July 13, 1997, at section 1, page 12.

C. Both DOI and State of Alaska Studies Indicate That the Greatest Oil and Gas Potential Exists Near The Coast

Historical exploration experience over the last 10 years has shown that all of the North Slope commercial hydrocarbon occurrences exist within 25 miles from the existing

coastline. No commercial oil or gas accumulations have so far been found to the south of this zone.

Near the coast (during past 10 years)

- 30 separate prospects have been drilled
- 20 discoveries (67% of the prospects)
- 15 developments (50% of the prospects)

South of the 25 mile zone (since 1950)

- 42 separate prospects drilled to date
- 6 sub-economic gas discoveries (14% of the prospects)
- 1 sub-economic oil discovery (2% of the prospects)
- 0 developments

Alternatives E through A make available decreasing amounts of acreage within the Planning Area for lease.

- Alternative E - 100% available for lease sales
- Alternative D - 89% available for lease sales
- Alternative C - 74% available for lease sales
- Alternative B - 43% available for lease sales
- Alternative A - 0% available for lease sales

BLM acreage numbers are, however, misleading. Clearly, much of the acreage in the Petroleum Reserve will not contain commercial quantities of oil or gas. According to DOI, all of the land with high oil and gas potential occurs in the northern part of the planning area.

Only Alternatives E and D provide any significant access to land with the highest probability of petroleum prospectivity.

Both the BLM and the State of Alaska agree that only Alternatives E and D offer any significant access to high potential oil and gas areas.

	BLM/MMS Draft EIS High Oil Potential	**Alaska Division of Oil and Gas High Petroleum Potential**
Alternative E	**100%**	**100%**
Alternative D	**71%**	**67%**
Alternative C	**36%**	**21%**

D. BLM Should Make The Entire High Prospectivity Area Available For Lease Because The Operational Restrictions And Requirements Proposed In The DEIS Will Fully Protect Sensitive Wildlife And Traditional Lifestyles

1. **Background**

Leasing the entire high prospectivity area will not have a significant detrimental impact on the environment or the inhabitants of the Planning Area. The operational prescriptions and restrictions – the stipulations -- which BLM intends to impose on the lessee of oil or gas leases will fully protect wildlife and traditional uses of the land. The DEIS proposes more than 80 operational restrictions and requirements, designed to eliminate any detrimental impact from oil and gas development. Some of these stipulations would attach to activities throughout the Planning Area. Other stipulations would be applicable only to oil and gas development or only to activities in specific portions of the Planning Area. The stipulations were based upon a substantial number of scientific studies conducted over an extended period of time.

BLM specifically notes in the DEIS that the stipulations are based on "present" knowledge and "could evolve" over time. Indeed, BLM also notes in the DEIS its intention to "inventory and monitor resource populations" to "assess the health of biological resources," and

the "effectiveness of management practices in protecting these resources." Moreover, the stipulations apply only to the "general" decision to make the Planning Area, or particular portions of the Planning Area, available for oil and gas leasing. Additional "site specific stipulations may result from subsequent site- or authorization-specific environmental analysis" or "during further NEPA analysis for any oil and gas activity" "including an exploratory drilling program or construction of the infrastructure necessary for development of an oil discovery" would require "further NEPA analysis" based on specific and detailed information about the type and location of the proposed activity. DEIS at II-27, II-35.

2. **BLM's Stipulations Address And Fully Mitigate The Impacts On Wildlife And Traditional Uses**

GOOSE MOLTING

Lakes North and East of Teshekpuk Lake support large concentrations of molting geese from late June to mid-August. Four species of geese, Brant, Greater White-Fronted Geese, Snow Geese, Canada Geese, from Canada, Siberia, and Alaska annually depend on this area to provide necessary food and protection during the flightless summer molt. Numbers build up to 70,000 geese in the area Northeast of Teshekpuk Lake. During molt, flightless geese are particularly sensitive to disturbance. Although these geese use about 200 lakes in this area, the majority of activity is concentrated on about 30+ lakes. Expressed concerns center on the potential for typical oil field activity (construction and operational noise and aircraft overflights) to sufficiently disrupt normal feeding behavior and prevent geese from building necessary energy reserves to complete molt and prepare for fall migration.

Alternative E goose stipulations would require:

- Buffers of no entry for 3280 feet around high use goose lakes and 1640 feet around low use lakes
- Stop construction activity June 18 to August 20
- Stop helicopter traffic June 15 to August 20

The proposed stipulations will be effective in mitigating any potential impacts to molting geese and other waterfowl. ARCO has conducted numerous special studies to monitor the effects of oil field disturbance on nesting, molting, and brood-rearing geese. Three specific studies, which were conducted in cooperation with the USFWS and EPA, were designed as long term assessments of pre-development, construction, and operational data on the overall impacts to geese and swans from noise, traffic, and facility presence and activity (Hampton et al. 1988, Anderson et al. 1992, and Murphy and Anderson 1993). These studies generally conclude that these monitored activities did not change the overall extent or nature of use of the developed areas by waterfowl. Most behavioral changes to stress were mild reactions, and most reactions occurred within 700 to 1000 feet from the stress. Seasonal waterfowl densities, distributions, and abundance patterns, including during nesting and molting, were not changed at any of the study areas. Moreover, the proposed stipulations were developed based on research and anticipating activity similar to that seen in Prudhoe Bay. New generation oil fields will be significantly smaller in both size and scope than the old Prudhoe and Kuparuk designs. Hence, many of the new technologies that would be applied in National Petroleum Reserve-Alaska will further reduce the minor (small number of mild reactions) and localized (within 700 to 1000 feet) alterations in goose behavior. Smaller footprints, with reduced presence and activity, including reduced traffic and aircraft movements, will reduce overall goose impacts substantially. Thus, the combination of new field design and new operational standards will ensure that oil and gas

exploration and development can occur within the goose molting area without disturbance to these birds.

CARIBOU MIGRATION AND CALVING

The Teshekpuk Lake Caribou Herd generally calves east and north of Teshekpuk Lake, and winters south of the Lake. Some believe the presence and uncontrolled activity of an oil field the size of Prudhoe Bay can lead to the long term stress of female caribou with young calves, and the eventual shift in calving away from this stressful activity. The general movement of caribou around Teshekpuk Lake is a further concern. The presence of the Kogru River on the east and other large surface lakes on the west of Teshekpuk Lake restrict the caribou migration between their summer and winter ranges to two land passages of about 6 miles wide on each side of Teshekpuk Lake. Facilities that would impede movement in these passages could prevent caribou from migrating most efficiently to their calving and summer range.

Alternative E caribou stipulations would require:

- Facilities within 2 miles of the Beaufort Sea limited to docks, causeways, staging pads
- Facilities within the identified "migration corridors" would be barred; pipelines may need to be buried
- Strict traffic controls between 20 May and 20 August; convoys, buses, and number of trip restrictions
- Road/pipe separations of 500 feet
- Three-year caribou monitoring study prior to development to ensure most effective facilities location restrictions have been developed to ensure unimpeded passage of caribou of all ages

The proposed caribou stipulations can eliminate any detrimental impacts on caribou calving success and migration in the Teshekpuk Lake area. The 1994 conclusion of the

State/Federal/North Slope Borough/Industry Caribou Steering Committee (Cronin et al.1994) found that road/pipe separations of 500+ feet and 5 foot minimum pipe heights are fully effective in providing unimpeded caribou passage across pipelines and roads. The DEIS (pages IV-F-12 and 13) concurred with this finding. Concerns for caribou passage across roads and pipelines can be eliminated with the proposed DEIS stipulations. ARCO further believes that camps, airstrips, and processing facilities can be constructed to avoid certain well-defined migration and calving corridors. ARCO believes caribou distribution and movement will be unaltered under Alternative E. Previous oil field studies have shown caribou cows with newborn calves (up to three weeks in age) occur at reduced densities within 1 to 2 miles from roads with moderate levels of traffic (Cronin et al.1994). Other caribou do not avoid roads at any time. After calves are older than three weeks, this road avoidance is abated. Road corridor avoidance by caribou cows with newborn calves also can be prevented by implementing traffic controls, such as those proposed in the DEIS, during this sensitive four to five week period (not all calves are born at the same time).

ENDANGERED AND THREATENED SPECIES

The endangered bowhead whale occurs seasonally in the Beaufort Sea adjacent to the planning area; the threatened Spectacled eider, and possible the Steller's eider, occurs seasonally within the planning area. The protective stipulations identified by the DEIS assure that detrimental impacts to endangered and threatened species are minimized or eliminated.

While increased marine vessel traffic and over flights may result in temporary avoidance behavior by the bowhead whale, the DEIS appropriately concludes that no stipulations are necessary to ensure that the bowhead is protected.

With respect to the Spectacled eider and, possibly Steller's eider, protective stipulations will ensure that any negative impacts are minimized. The same protective stipulations placing seasonal restrictions on air traffic in the goose molting LUEA will minimize the disturbance to eiders from May through August, when they are present in the reserve, so that Alternative E will cause no greater disturbance to breeding and nesting eiders than Alternative B. In addition, stipulations related to waste disposal will prevent attraction of the eider's predators.

SUBSISTENCE

The DEIS concludes that generally with the protective stipulations, oil exploration and development will not impact subsistence, except that even with the protective stipulations, development associated with Alternative E may likely cause long term displacement of caribou from their preferred habitats causing their pursuit by subsistence hunters to become more difficult if animals shift their distribution further away from Nuiqsut. This conclusion is based on the assumption that Petroleum Reserve developments will be multiple in number, all occur in the general calving area, and that traffic from these operations will cause caribou to be displaced within 1.86 to 2.48 miles from field roads. The cumulative impact from this traffic displacement is judged by the DEIS to eventually cause a permanent shift in distribution, which could cause subsistence hunters to travel farther to get to caribou.

Alternative E subsistence stipulations would require:

- Stipulations to reduce interference with caribou movements: (1) Limiting types of surface occupancy permitted within 2 miles of Beaufort Sea to docks, causeways, and staging pads; (2) separation of pipelines and road by at least 500 feet; (3) possibly requiring burial of all facilities, including pipelines, located within movement corridors between Teshekpuk Lake and the Beaufort Sea; and (4) restrictions on aircraft altitude from October through July. DEIS at IV-F-12-13.
- Stipulations to reduce interference with goose molting habitat: (1) prohibition on drilling, other than from production pads from May through September; (2) avoiding disturbance of goose feeding habitat on lakeshore margin; and (3)... consolidation of facilities. DEIS IV-F-10.
- Stipulations to reduce interference with arctic fish: (1) restrictions on activities and storage on ice or in proximity to water; and (2) restrictions on water withdrawal from water bodies to maintain free flow. DEIS at IV-C-18.

The effectiveness of the stipulations and the impacts of development activities will be monitored by the Subsistence Advisory Panel that BLM has committed to create under all of the proposed alternatives. DEIS at II-39.

The DEIS caribou displacement conclusion is based on an invalid assumption of the detrimental impacts of current design and mitigation and is overstated. The DEIS expected displacement shift and any resulting hardship to subsistence hunting success should not occur. The displacement shift recorded in the Kuparuk Field, which is the support for this DEIS conclusion, occurs only for cows with newborn calves younger than three weeks in age. All other groups of caribou, including bulls and yearlings, do not show any avoidance of roads or any "displacement shift" (Cronin et al.1994). Further, the observed shift for cows and newborn calves away from traffic roads disappears after calves mature past three weeks in age. There are no other recorded displacements by any other caribou groups. 001

It is important to put into perspective the recorded three-week "displacement" of cows with newborn calves that has occurred in the Kuparuk oil field. Kuparuk is a large complex of 40 drill pads, three processing centers, one sea water treatment plant, two camps, one jet airport, and many hundred trucks and larger vehicles moving without traffic controls on 180

miles of road. Future oil fields in National Petroleum Reserve-Alaska will not look like Kuparuk, nor will they generate the amount of traffic which can lead to the short-term displacement assumed in the DEIS. Traffic controls on vehicle movement can very easily be implemented, since future fields should have significantly fewer vehicles and fewer roads. 001

Finally, the DEIS caribou stipulations correctly recognized that cows with calves are most sensitive to disturbance, thus proposed DEIS stipulations control the number of vehicle and airplane passes that can occur during the calving season. These controls combined with other caribou stipulations, such as appropriate pipeline height and road/pipeline separations, allow caribou to maintain normal movement and behavior, and, thus, subsistence hunters should not be impeded in their pursuit of caribou.

ARCO recognizes that Fish Creek is an important area for local subsistence users. Access across Fish Creek is necessary in order to develop any oil and gas reserves in the Planning Area. ARCO recommends that reasonable access for pipeline and other limited surface uses along the Fish Creek drainage be allowed after consultation with the State and North Slope Borough in order to mitigate any conflict with subsistence activities.

E. **BLM Should Not Exclude Portions Of The High Prospectivity Area From Leasing Because Such Exclusions Will Reduce The Potential For Oil And Gas Development Without Any Benefit To Wildlife Or Traditional Lifestyles**

Alternative D would exclude from the land available for oil exploration and development approximately half of the high prospectivity acreage. Such an exclusion would significantly reduce the likelihood of successful oil and gas development, but it would not provide any additional protection to either geese or caribou beyond the protection afforded by the stipulations that would govern in the absence of the proposed exclusion. BLM's proposed goose

and caribou stipulations, for example, would prevent surface activities on most of the area deleted by Alternative D (Figure 1). Unlike the territorial exclusion, however, the stipulations would permit surface activities where such activities would not harm either species. Allowing facilities on these limited areas, with modern exploration and development techniques – including horizontal and extended reach drilling – would permit the recovery of the hydrocarbons located in the entire area. Thus, specific operational requirements and restrictions rather than wholesale territorial exclusion can protect wildlife and traditional uses of the land while, at the same time, permitting the discovery and removal of oil and gas deposits.

The territorial exclusion is particularly unnecessary in the caribou corridor 002
located to the east of Teshekpuk Lake. The proposed stipulations would prevent surface use in almost all but a small strip of that corridor (Figure 1). We recognize the unique nature of the area between Teshekpuk Lake and Kogru Inlet. The physical size and location of Teshekpuk Lake funnel caribou to the east of this lake as they move north from winter ranges. Once caribou are on the east side of Teshekpuk Lake, other large water bodies and the Kogru Inlet further limit caribou migration and calving to a relatively small percentage of "dry land" in this corridor. We believe several modifications from the "standard mitigated caribou design" will provide additional layers of protection for these animals, for this season, and for this specific location. While the ultimate selection of any of these options will be best based on further detailed knowledge of factors such as oil reservoir quality and location, soil type, and lake bathymetry, we believe they have sufficient potential to be considered for this unique caribou area.

The design options ARCO is reviewing for this area focus on modifying aspects of specific site location, facility presence and activity, and pipeline design and routing to address identified sensitivities of migrating and calving caribou. Historically we have sited facilities out

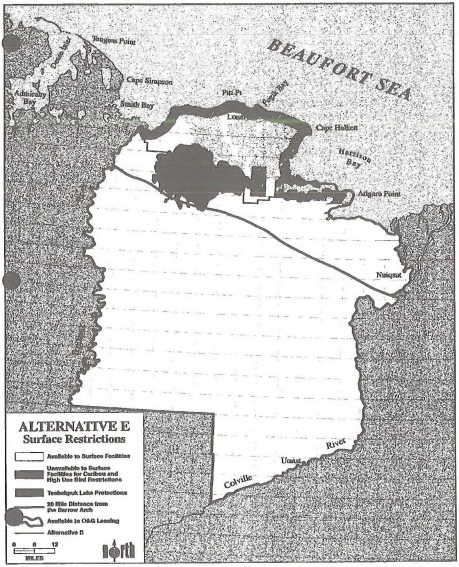

FIGURE 1

of wetland and lake habitats, which by default placed roads and facilities on dry tundra, which is preferred by caribou for both migration and calving. These pads were built with gravel fill. For this special area we have the option of re-designing our presence and moving drill sites away from caribou habitat and placing a pile-supported platform in a shallow lake not used by molting geese. Such a lake does occur in this area. This facility could be remote and without road connection, hence little or no gravel fill would be used in this scenario. The drilling facility may be removed following the initial drilling period, leaving special low profile well heads. Again, of most significance to caribou, this design would minimize gravel in this area. Extended reach drilling may only require this one platform to produce oil from this special area.

Pipelines transporting oil and gas out of this area could be built using one of, or a combination of, three design modes. If oil quality is appropriate, the pipe could be buried, since low wax point oil may be cooled to near 32 degrees, reducing thermal problems with buried pipelines. Conventional vertical support members (VSM) pile-supported pipe could also be used with pipe height above 5 feet in identified special caribou migration zones, or the new stainless steel "flex pipe" design could be used and potentially flex pipe placed in lake beds to minimize dry tundra caribou encounters. If pipe were not placed in lakebeds then pipe routing out of this special area could be optimized to further limit caribou encounters. With elevated pipelines, vertical expansion loops with pipe heights up to 20+feet and span widths at 100+ feet can be sited at critical caribou migration corridors. It is assumed pipe would travel generally towards the south or southeast to a processing plant located beyond this area. Hence, following this scenario, only one pile-supported platform with a pipeline designed and located to avoid caribou impacts would occur in this area.

Well head monitoring could be accomplished using remote optics and video, with infrequent actual manned visits during the 6-week caribou calving season. Necessary visits during this season could be via helicopter, flying prescribed routes and altitudes.

If VSM pipelines are present, it may be economically and technically feasible to consider using an alternative transportation system with controlled access to transport operational personnel to this location. Of course drilling support and all other winter access could use an ice road to transport materials and personnel. Beyond the special caribou zone typical mitigation design standards could again be employed to mitigate disturbance to caribou and birds.

The proposed DEIS stipulations rest on extensive studies, and the prescriptions and restrictions contained in the stipulations have been demonstrated to be effective in eliminating detrimental impact on the caribou. Nothing in the scientific data suggests that "exclusion" will provide any greater benefit than the operational restrictions proposed in the stipulation. Moreover, the DEIS proposed stipulations were designed to address problems observed in the context of heavily developed fields like Kuparuk, not "small footprint" fields like those expected in the Planning Area. The "small footprint" fields may not cause the effects observed in Kuparuk in the first place. Using most recent examples of modern oil field size, only about 100 acres of footprint would be necessary to produce a similar oil field in NPRA. If more than one field is discovered, it is highly probable that less than 100 acres per oilfield would be required since common facilities such as airstrip, camp, and processing plants may be able to be shared. Consolidated use of facilities will of course depend on each field's location. Finally, the DEIS proposed stipulations require that additional studies be conducted prior to development to ensure the efficacy of the stipulations in addressing the concerns.

F. **BLM Has Incorrectly Evaluated Alternative E Under The ANILCA Standards** 003

The Alaskan National Interest Lands Conservation Act ("ANILCA") requires BLM to assess three factors to determine the impact of proposed leasing in the Planning Area upon subsistence resources. 16 U.S.C. § 3120(a). These factors include:

1. the effect of the leases on subsistence uses and needs;
2. the availability of other lands for oil and gas leasing; and
3. other alternatives which would reduce or eliminate the amount of land taken from subsistence uses.[17]

If the proposed leasing of lands "would significantly restrict subsistence uses," then BLM could undertake this proposed action only if it found that:

1. the significant restriction upon subsistence uses and needs is "necessary, consistent with sound management principles for the management of public lands;"
2. "the proposed activity will involve the minimal amount of public lands necessary to accomplish the purpose of such use, occupancy or other disposition;" and
3. "reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions."

Id.

BLM incorrectly concludes in the DEIS that Alternative E would significantly restrict subsistence uses of land within the planning area by the Native population.[18] BLM's

[17] Kunaknana v. Clark, 742 F.2d 1145, 1150-51 (9th Cir. 1984).

[18] It is important to recognize the extremely limited nature of the "significant restriction" that the BLM found would occur under Alternative E. BLM acknowledged that, with the protective stipulations included in Alternative E:

(Continued ...)

determination that a "significant restriction" would occur is based solely upon its contention that "Alternative E could make Nuiqsut's pursuit of caribou more difficult for at least an entire season." Id. The conclusion in the DEIS that Alternative E would result in caribou displacement that would require subsistence hunters from Nuiqsut to travel greater distances to get to caribou is based upon several invalid assumptions. First, the DEIS unrealistically assumes that multiple developments will occur in the general calving area and that traffic from these operations will cause caribou to be displaced within 1.86 to 2.48 miles from field roads. Second, the DEIS improperly extrapolates from impacts associated with outmoded development methods, such as those used at Kuparuk. In doing so, the DEIS overstates the displacement that is likely to occur

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- no subsistence resource would become unavailable;
- no subsistence resource would become undesirable for use; and
- no subsistence resource would experience overall population reductions.

DEIS at D-6. Moreover, the BLM determined that "stipulations for set-backs . . . around fish-bearing lakes and streams would protect water, fish habitat, and wetlands." Id. In protecting wetlands, the stipulations would also protect habitat for waterfowl that are an important component of the subsistence harvest for Native populations. Id. Finally, the BLM acknowledged that any negative effects on subsistence resources "are not expected to have significant impacts upon subsistence-harvest patterns in Barrow and Atqasuk. Id.

The DEIS takes inconsistent positions with respect to whether Alternative D would significantly restrict subsistence uses. While the formal ANILCA finding states that a significant restriction would result under alternative D, the evaluation states that: "no resource would become unavailable, undesirable for use, or experience overall population reductions, resulting in no significant impacts to subsistence harvest patterns," DEIS at D-5, language which is reiterated in the Comparison of Impacts table, DEIS at II-65. Similarly, the discussion of subsistence impacts for Alternative D in the body of the DEIS suggests that no significant restriction would result. IV-B-20-21. BLM should clarify its position on the subsistence impacts of Alternative D.

For the reasons set forth in the discussion related to Alternative E, no significant restriction would occur.

as a result of less intrusive and less disruptive development techniques that are likely to be used in the Petroleum Reserve. Developments in the Petroleum Reserve will have substantially fewer vehicles and fewer roads than Kuparuk, which will make it easier to impose traffic controls during the calving season as required by the stipulations. Finally, even at Kuparuk, displacement is limited in both time and scope. Only cows with newborn calves younger than three weeks in age evidence any displacement; all other groups of caribou, including bulls and yearlings, do not show any avoidance of roads or any "displacement shift." Further, the observed shift for cows and newborn calves away from traffic roads disappears after calves mature past three weeks in age.

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Contrary to BLM's conclusion, Alternative E stipulations, which would control the number of vehicle and airplane passes, and require appropriate pipeline height and road/pipeline separations, would allow caribou to maintain normal movement and behavior, and, thus, subsistence hunters from Nuiqsut should not be impeded in their pursuit of caribou. Consequently, BLM's conclusion that Alternative E would significantly restrict subsistence uses, specifically subsistence hunting of caribou by Nuiqsut residents, is incorrect.

G. BLM Has Correctly Assessed As Minimal The Environmental Impacts That Are Not Addressed By The Stipulations

BLM has properly identified and evaluated in the DEIS all direct and indirect impacts of proposed leasing in the planning area, in compliance with the National Environmental Policy Act.[19] The BLM has substantial experience and expertise related to the planning area environment. The Petroleum Reserve environment was studied extensively during the 1970s,

[19] See 42 U.S.C. § 4332(2)(C); 40 C.F.R. § 1508.8.

pursuant to Congressional mandate. In addition, the planning area environment is similar to the environment considered in several recent environmental impact statements and assessments related to other lease sales.

H. The DEIS Has Correctly Evaluated As Minimal The Cumulative Impact Of Oil And Gas Exploration On The North Slope

Similarly, the BLM has properly considered and evaluated all cumulative impacts or incremental effects of the proposed leasing on the Planning Area environment, "when added to other past, present, and reasonably foreseeable future actions."[20]

I. Conclusion

ARCO Alaska, Inc. supports Alternative E and believes the legal, environmental and geologic data available to the BLM justifies such a decision. Alternative E complies with the mandates for management of the National Petroleum Reserve-Alaska, provides a level of environmental protection that is more than adequate to protect the varied resources found in this area, and will maximize revenues to both the State and U.S. governments by allowing the greatest chance for exploration success. In summary, ARCO reiterates that:

- The Planning Area is part of the National Petroleum Reserve-Alaska – an area mandated for development of its oil and gas resources;
- The Bureau of Land Management has told us in the DEIS what will be necessary to fully protect the environment and we are prepared to do that;
- The area that has the highest potential for the discovery of commercial quantities of oil and gas is within 25 miles of the coast this area should be included in the first lease sale; and

[20] 40 C.F.R. § 1508.7.

- A lease sale should be held in 1998 to meet the economic and energy needs of the country.

Alternative E is the only option presented in the DEIS which allows leasing of the entire Planning Area and, as such, ARCO supports Alternative E.

In conclusion, BLM should resume leasing in the entire Planning Area.

Literature Cited

(Included as Attachments)

Anderson, B. A., Murphy, S. M., Jorgenson, M. T., Barber, D. S., and Kugler, B. A. 1992. GHX-1 waterbird and noise monitoring program. Final Rep., prepared for ARCO Alaska, Inc., Anchorage, by Alaska Biological Research, Inc., Fairbanks, and BBN Systems and Technologies Corp., Canoga Park, CA. 132 p.

Cronin, M. A., Ballard, W. B., Truett, J. and Pollard, R. H. (1994) Mitigation of the effects of oil field development and transportation corridors on caribou. Final report by LGL Alaska Research Associates, Inc., for Alaska Oil and Gas Association. On file at Alaska Oil and Gas Association, Anchorage, Alaska. 24 p , appendices.

Hampton, P. D., Orr, L. C. and Byrne, L. 1988. An evaluation of the effects of noise on waterfowl in the vicinity of CPF-3, Kuparuk Field Alaska. Prepared for ARCO Alaska, Inc. 111 p , appendices.

Murphy, S. M. and Anderson, B. A. 1993. Lisburne Terrestrial monitoring Program—The effects of the Lisburne Development Project on geese and swans, 1985-1989. Final synthesis report prepared for ARCO Alaska, Inc., Anchorage, Alaska, by Alaska Biological Research, Inc., Fairbanks, Alaska. 202 p.

1662-001
The draft EIS conclusion on caribou is based on documented disturbance and displacement of calving caribou and their calves during the season due to vehicular traffic. See Response 1658-058. Displacement of cows and calves for 3 weeks after birth is a critical time for the survival of the calves.

The situation for the Teshekpuk Lake Caribou Herd is different from that for the Central Arctic Herd on the Kuparuk oil field. Calving caribou of the Teshekpuk Lake Herd must pass through a narrow corridor between the lake and Kogru Inlet to get to calving range north of the lake. Vehicle traffic across this corridor during the spring is expected to divert calving-caribou movements away from habitats north of the lake.

Regarding mitigation, caribou biologists at the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop (USDOI, BLM, 1997) tried to come up with restrictions in vehicular traffic during the calving season in the migration corridor between Teshekpuk Lake and Kogru Inlet. It was concluded that any traffic during calving could divert caribou from crossing the corridor.

For a response to the comment regarding subsistence caribou hunting success, please see Response 1656-002.

1662-002
The proposed stipulations were developed to mitigate impacts to caribou while still allowing petroleum production. Past studies have shown that such operational requirements can reduce impacts. However, there exists a considerable degree of uncertainty among scientists as to whether or not impacts would be entirely precluded. The additional modifications to field design suggested by the commenter probably also would reduce impacts if they proved to be technically feasible and without off setting environmental costs, but this also is uncertain. An alternative that allows no development in this sensitive area is the only one that can provide certainty that there would be no impacts to caribou.

1662-003
Please see Response 1656-002.

1663

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March 12, 1998

Mr. Pat Shea
Director, Bureau of Land Management
1849 C Street, NW MS-5660
Washington, D.C. 20240

Dear Mr. Shea:

I am writing today to submit comments on the Bureau of Land Management's Draft Integrated Activity Plan/Environmental Impact Statement for the northeast corner of the National Petroleum Reserve in Alaska(NPR-A).

As you know, this petroleum reserve numbered four was established in Alaska by Executive Order of the President on February 27, 1923. Contrary to statements often repeated by those who are opposed to leasing in NPR-A, economic considerations have always been a factor in development within the naval petroleum reserves. The very first line in the Naval Petroleum Reserve Act, (Title 10 U.S. Code, § 7420) states, "The term "national defense" includes the needs of, and the planning and preparedness to meet, essential defense, industrial, and military emergency energy requirements relative to the national safety, welfare, and economy, particularly resulting from foreign military or economic actions." *(emphasis added)*."

Our Nation's over reliance on foreign crude oil supply to meet our domestic demand is problematic. High paying resource-based jobs are exported each year while our domestic potential lies undeveloped. Opponents of development within this petroleum reserve cite the need to keep this area in reserve. While this is good material for a sound bite, it is irrational. For the government to realize the true potential of NPR-A, tracts for lease must be offered in areas with the greatest potential for a discovery. To do otherwise is to consign NPR-A to the fiction "its been explored and found wanting." Competitive interest in the rights to explore and develop this area is relatively high now, despite earlier drilling results. Therefore, notwithstanding current oil prices being at a four-year low, I see 1998 as an opportune time to auction tracts from the standpoint of maximizing bonus bids to the Treasury. Furthermore, I am sure you are well aware that it will be a number of years before the first barrel of oil from NPR-A could be brought to market. Royalties levied on production then will depend upon market prices upon which we can only guess today. To delay development based on current prices, would be short-sighted and unfair to workers in Alaska and around the Nation who will benefit from this resource.

I urge the Bureau to support an alternative which allows the greatest potential for a significant discovery. Alternative E seems the most appropriate as it opens all of the northeast section of NPR-A for development while recognizing the need for environmental stipulations. To open an area with low potential, regardless of the acreage, will not accomplish the goals stated *within the Draft Integrated Activity Plan/* Environmental Impact Statement.

Sincerely,

Don Young
Congressman for all Alaska

DY/mkh

National Audubon Society

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March 10, 1998

Gene Terland, NPR-A Planning Team
Bureau of Land Management, Alaska State Office
222 West 7th Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland:

On behalf of the Alaska State Office of the National Audubon Society, I am providing you with our comments regarding the Draft Integrated Activity Plan and Environmental Impact Statement (DEIS) for the Northeastern Planning Area of the National Petroleum Reserve-Alaska (NPRA). The National Audubon Society has more than 500 chapters with a national membership of over 550,000. In Alaska, Audubon has over 2000 members with chapters in Juneau, Anchorage, Kodiak, and Fairbanks. The mission of Alaska Audubon is to conserve natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit and enjoyment of current and future generations. Although most National Audubon Society members do not reside in Alaska, they do enjoy the millions of birds migrating each year from Arctic nesting, molting, and staging areas to feeding stopovers and wintering areas in the continental U.S. and elsewhere in the world. Therefore, our members have a keen interest in what happens to critical bird habitats in NPRA. The following comments on the NPRA DEIS are directed primarily at issues associated with wildlife and habitat conservation and largely follow our scoping comments of 4 April 1997.

Alaska's North Slope encompasses our nation's most spectacular Arctic wilderness and provides critical habitat for many species of fish and wildlife. The 4.6 million-acre northeastern region of NPRA has long been recognized for its extraordinary wildlife values. The Naval Petroleum Reserve Production Act of 1976 (NPRPA), states that the oil reserves of the NPRA are to be managed in "...a manner consistent with the total energy needs of the Nation..." (P.L. 94-258). The DEIS does not explicitly demonstrated how NPRA oil "reserves" will be managed in the best, long-term interest of the Nation in the absence of a national energy policy. The DEIS fails to provide a clear and compelling rational for why leasing must occur now. For example, there is no shortage of oil; prices are at an all time low; and there has been no national debate or discussion about this matter. All of these should be prerequisites for leasing. Recent actions by the Department of Interior and State of Alaska, however, suggest that leasing in NPRA is imminent and that Alternative A (the no leasing alternative) is not being seriously considered. The DEIS, for example, references a planned sale "tentatively scheduled" for late 1998 (DEIS pp. IV-A-6). 001

In recognition that leasing seems assured in the short term, Alaska Audubon's comments focus on alternatives and opportunities for protecting the most significant wildlife populations and habitats within the planning area. We also provide comments on deficiencies of the DEIS and the need for developing a comprehensive conservation strategy for all of NPRA as well as the entire North Slope. Audubon does not support leasing now. However, if the Secretary of Interior makes the decision to lease, we want assurance that wildlife in the designated Special Areas and their key tributaries are responsibly protected to balance leasing in the remainder of the planning area.

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Alternatives

Alaska Audubon is concerned about the limited scope of alternatives considered. None of the five alternatives propose permanent protection for the Teshekpuk Lake or Colville River Special Areas. None of the alternatives would prohibit the placement of pipelines, roads, gravel mines, or other surface facilities within these designated Special Areas. In addition, we have little confidence that mitigation measures proposed through stipulations will provide adequate habitat protection for wildlife (in many instances it appears that they could be waived for economic reasons). 002

Preferred Alternative: The DEIS does not identify a preferred alternative among the five presented. This does not provide reviewers an opportunity to respond to a likely management scenario. We urge BLM to provide a public review and comment period on their selected alternative prior to issuing a final EIS and Record of Decision. Without this opportunity, the public will be denied a fundamental right to provide their reasoned voice in how their public resources are managed. 003

Alternative A: Alternative A (the no leasing alternative) provides the greatest protection (though not permanent) for the planning area's valuable fish, wildlife, recreational, and subsistence resources while maintaining NPRA's oil in "reserve" for future needs. We recognize, however, that this alternative has little likelihood of being selected.

Alternative B: Of the additional alternatives, Alternative B identifies the most critical wildlife habitats and provides the highest degree of protection for wildlife resources of the Teshekpuk Lake Special Area and adequate conservation buffers for Fish and Judy creeks and Ikpikpuk, Kikiakrorak, and Kogosukruk rivers. Unfortunately, Alternative B explicitly assumes that a wide variety of industrial activities would be allowed in the Special Areas and LUEAs. Under Alternative B, pipelines crossing all lands would be allowed in all areas (except the potential Colville Wild and Scenic River LUEA), even in the most critical feeding areas used by molting geese. A wide variety of industrial activities ranging from water withdrawal, seismic surveys and temporary facilities such as staging facilities would be allowed in all areas closed to leasing in Alternatives B-D. Alternatives B and C also do not prohibit construction of roads through the Special Areas and LUEAs , except for a limited buffer area around goose-molting lakes, (stipulation 25., DEIS p. II-30), which may be waived by the BLM.

Alternative B does not provide adequate protection for the Colville River. The DEIS describes the LUEA for the Colville as a 2-mile strip on the west side of the river from the southern planning boundary to just south of Nuiqsut (DEIS, p.II-3), and in Alternative B, it states there would be no leasing in this LUEA (DEIS, p. II-19). We remain concerned, however, that a narrow strip of land will not afford sufficient protection. A greater buffer zone, as is provided by the boundaries of the Colville River Special Area as designated in 1977, is needed for this important river corridor.

In summary, Alternative B would need additional and significant modifications to be acceptable to Alaska Audubon (see Audubon's recommended alternative below).

Alternative C: This alternative provides only minimal protection for the Teshekpuk Lake Watershed and surrounding area. It provides no substantive protection for the important wildlife

resources of the Colville and other major rivers identified in Alternative B. We do not believe this alternative adequately protects the significant fish wildlife, subsistence, recreation or scenic values within the planning area and should thus be rejected from consideration.

Alternative D: We believe this alternative provides inadequate protection for the Teshekpuk Lake area and, like C, only limited protections (primarily through stipulations) for other important resources within the planning area. Alternative D should be rejected from consideration.

Alternative E: This alternative should be rejected from consideration because it clearly provides no protections (except through inadequate stipulations) for the important surface resources in the planning area.

Audubon's Recommended Alternative if Leasing Proceeds

If leasing is to occur, Alaska Audubon strongly urges the Secretary of Interior to develop and select a new alternative (or a significant modification of B) that protects the wildlife values of both Teshekpuk Lake and Colville River Special Areas and several other riparian corridors within the planning area. The Naval Petroleum Reserves Production Act of 1976 authorized the Secretary of Interior to designate, within the NPRA, areas "containing any significant subsistence, recreation, fish and wildlife, historical, or scenic value." In recognition of their high values, the Secretary of Interior in 1977 designated Teshekpuk Lake and upper Colville River as Special Areas within the NPRA. The National Audubon Society, a number of other conservation organizations, and natural resource agencies including the US Fish and Wildlife Service and the Alaska Department of Fish and Game have, for many years, pressed for habitat protection for these rich Special Areas.

If BLM and the Secretary of Interior make the irreversible decision to proceed with leasing in NPRA, it is essential that they also defer these two Special Areas from leasing now and seek a designation of permanent protection for the future. The protection we request for these Special Areas includes withdrawing them from future leasing and development including the construction of roads, pipelines, and other surface infrastructures. An alternative for the Colville River we would consider (following consultation with knowledgeable scientists) would be a no-lease conservation buffer (of five miles) along the western portion of the river. Other important wildlife areas Audubon recommends for protection include Fish and Judy creeks and Ikpikpuk, Kikiakrorak, and Kogosukruk rivers. These important areas should be provided with conservation buffers (as identified in Alternative B) which, at minimum, prohibit surface occupancy including road, surface pipelines, and other oil field infrastructures. 004

Colville River Bird Conservation Area

Alaska Audubon commends the BLM for developing the concept of a Bird Conservation Area proposed (under Alternatives B-E) as a conservation buffer along both sides of the Colville River. At this time, however, we are still unclear how this concept would function and what safeguards and/or regulator authority would be incorporated into the Bird Conservation Area. We are not aware that this concept carries any authority in assuring protection of riparian habitat under a leasing program and are concerned about the narrow buffer, particularly on the western border of 005

the river. This concept, however, with adequate safeguards and combined with a no surface occupancy buffer on the western border would be worthy of further consideration. 005

Wildlife of the Affected Environment

We are concerned that the DEIS does not adequately describe the biological resources of the northeastern planning area of the NPRA. This situation is compounded by the fast track that preparation of this DEIS has taken.

Teshekpuk Lake: Teshekpuk Lake Special Area provides essential molting habitat for internationally significant populations of Pacific brant, greater white-fronted geese and Canada geese (King 1997.) The Teshekpuk Lake watershed provides nesting habitat for northern pintails, oldsquaws, king eiders, Pacific brant, greater white-fronted geese, Canada geese, tundra swans, and three species of loons-Pacific, red-throated, and the rare yellow-billed loon. Spectacled eiders, listed as a threatened species, have relatively high nesting densities in this area. Compared to geese and other waterfowl, we are particularly concerned that species including loons, shorebirds, eiders and others have much less reliable distribution and abundance information within the planning area.

Each year, nearly 22% of the world's Pacific brant population migrates to molt in the Teshekpuk Lake area, replenishing fat stores on lush wetland plants adjacent to large deep lakes (King and Hodges 1979; Bollinger and Derksen 1996). The Teslekpuk area is also an important molting area for greater white-fronted geese, Canada geese, and snow geese. An average of 37,000 geese of these 4 species use the area annually (King, 1997). There is no other comparable area with the combination of low-lying lakes, lush vegetation and freedom from disturbance available to this brant population along Alaska's northern coast (Weller et al. 1994). Biological research carried out since the last NPRA lease sales has further documented the critical importance of this area to black brant, other waterfowl, loons, and shorebirds.

Intensive studies on brant habitat use, energetics and disturbance were conducted by the U.S. Fish and Wildlife Service and university biologists during the late 1980's (Bollinger and Derksen 1996, Jenson 1990, Miller 1994, Taylor 1993, Weller et al. 1994). These further documented the sensitive nature of these unique wetlands, their importance to the entire Pacific brant population, and the susceptibility of brant to disturbance from helicopters and ground disturbance (Derksen et al. 1979, 1982; Jenson 1990).

Studies documenting significant behavioral effects to brant from helicopter overflights (Derksen et al. 1992) found that molting brant did not habituate to repeated aircraft disturbances (Jensen 1990). A scientific model developed for this area found that up to 25% of the flightless, molting population could experience weight-loss which in turn could affect their migration success (Miller 1994). Other studies have documented that brant are sensitive to fixed-wing aircraft, as well as helicopters, and to human ground disturbances (Ward and Stehn, 1989). In the event that oil fields are developed without connecting roads, there will likely be increased levels of air traffic compared with existing North Slope oil fields. This has not been adequately analyzed in the DEIS. Furthermore, the DEIS fails to discuss differences in the potential energetic consequences of 006

disturbance to the Pacific black brant population which undergoes a lengthy molt migration (Owen, 1980) to reach the Teshekpuk Lake area compared with studies of North Slope nesting brant. 006

The Teshekpuk Lake Special Area also encompasses the major calving area for the 25,000 animal Teshekpuk caribou herd. This herd constitutes an important food resource for local Native villages located in this region of the North Slope.

Colville River: The Colville is the largest of Alaska's rivers that flow to the Arctic Ocean. The Colville River is perhaps best known for its remarkable densities of birds of prey, including Arctic peregrine falcons, gyrfalcons, rough-legged hawks, and golden eagles. The Colville River has over 60 nesting pairs of peregrine falcons, 20 pairs of gyrfalcons, and more than 100 pairs of rough-legged hawks (T. Swem, pers. comm.). About half these birds nest in the planning area. The intact habitat of the Colville River played a key role in the recovery of the Arctic peregrine falcon, which was removed from the list of North American endangered species in 1996. The Colville and its tributaries also provide the most diverse and abundant habitat for songbirds on the North Slope T. Swem, pers. comm.). In addition, this area provides important habitat for moose, brown bears, wolves, wolverines, and at least twenty species of anadromous and freshwater fish. It is vital source of subsistence foods for area residents, and is a spectacular scenic area with tremendous recreation values for remote, wilderness experiences. 007

We are particularly concerned about the potential demand for gravel from the Colville River floodplain (as there are few identified gravel sources within NPRA) and the cumulative effects on critical riparian bird habitats from adjacent habitats outside the NPR-A boundaries. We believe that the value of the Colville River Special Area was substantially underrated in the DEIS.

General Conservation Concerns for Birds: We are concerned that oil and gas leasing and development in the planning area may result in significant impacts to bird populations and the habitats upon which they depend. The fast track this planning process has taken has not provided adequate scientific study or thorough impact assessment to the full diversity of migratory birds and their habitats. For example, no new field studies on birds were conducted for this DEIS and much of the information relied upon, even for rare and endangered species, was decades old. The DEIS inadequately addresses many of the direct, indirect, and cumulative effects to birds and their habitats from roads, gravel mining, contaminants, and the duration or intensity of potential aerial and ground disturbances. Furthermore, there are few supporting data provided for the conclusions regarding impacts to birds, nor clear evidence that a comprehensive literature review of all relevant data on bird resources was accomplished. 008 009

We are particularly concerned that adequate analysis of impacts of industrial development on a wide diversity of neotropical migrant birds and their habitats was not completed for this DEIS, despite the significance of the planning area, particularly the Colville River and its tributaries, for nesting. Within the NPR-A, all 13 of the vertebrate species ranked by the Alaska Natural Heritage Program as facing imminent or long-term population threats are birds including the spectacled eider, Steller's eider, black guillemot, buff-breasted sandpiper, red knot, white-rumped sandpiper, bar-tailed godwit, stilt sandpiper, Baird's sandpiper, yellow-billed loon, bluethroat, Arctic peregrine falcon, and gyrfalcon (Wilbor, 1997). Although the NPRA comprises a significant portion of the breeding range for these species in Alaska, there is little or no information on habitat

use and distribution for six of these species in NPR-A. This basic scientific information is needed in order to conduct meaningful assessment of potential impacts of oil leasing. 009

The DEIS fails to present existing scientific data on decreased nesting or breeding season densities due to Prudhoe Bay roads for birds including lesser golden-plover, semipalmated sandpiper, pectoral sandpiper, dunlin, stilt sandpiper, buff-breasted sandpiper, and red phalarope (Troy, 1993). Semipalmated sandpiper nesting density declines of 40% next to major oil field roads have been documented (Troy, 1993). Although the DEIS claims that there will not be an extensive road network built for NPR-A oil fields, this assumption is as yet untested by field experience (see comments on the Alpine Field).

Much of the existing breeding habitat for the spectacled eider is found within the NPR-A, and areas of higher concentrations are found within the Teshekpuk Lake Special Area. Although there have been annual breeding pair annual surveys by the U.S. Fish and Wildlife Service, there have not been recent ground nesting surveys within the NPR-A. Furthermore, the results of an on-going analysis of the relationship between mapped vegetation types and the breeding pair data being conducted jointly by the BLM and U.S. Fish & Wildlife Service has not been completed.

The DEIS fails to provide scientific documentation or adequate rationale that leasing could be allowed in Teshekpuk Lake Special Area "in a manner which will assure the maximum protection of such surface values to the extent consistent with the NPRPA of 1976." The stipulations are inadequate mitigation because they can be waived or exempted even in the goose molting areas. In fact, there are no prohibitions against building pipelines across the prime goose feeding grounds. Roads, airports, gravel mines, docks, processing plants and other facilities are not strictly prohibited in the Teshekpuk Lake Special Area. In order to ensure maximum protection of these internationally unique resources as is required by the National Petroleum Reserves Production Act, Audubon recommends prohibiting leasing and industrial activities in the Teshekpuk Lake Special Area. 010

Major Deficiencies of the DEIS

The evaluation of potential impacts from oil development activities in the northeastern NPR-A is based upon a series of proposed development scenarios that are still incomplete and untested when evaluated in the context of existing development in the region. As a result, the nature and extent of potential impacts is understated. 011

The assumption that future leasing and oil field development within the NPRA will have negligible impacts on fish and wildlife is unsubstantiated. Although ARCO's Alpine Field has a much smaller footprint than earlier developments in Prudhoe Bay, it is still a concept not a field-tested model. To date, there are no working fields on the North Slope like Alpine. What will the Alpine Field look like in ten years? Will there be ancillary field connected with pipelines and roads? How will this field serve as a "stepping stone" for further developments? There is yet no empirical evidence for these important questions. Clearly, our previous experience with Prudhoe Bay and Kuparuk has demonstrated that expansive, incremental development is the rule rather than the exception. A major concern within NPRA deals with incremental piece-meal development which at some threshold level may have very significant impacts on fish, wildlife, recreational, and subsistence resources. We hope this is not the case and applaud the concept behind Alpine. However, there is

no field-tested data to demonstrate that NPRA will not evolve into a far greater infrastructure of interconnected roads, pipelines, and drill pads which could have significant impacts on NPRA's wildlife resources. 011

The DEIS does not address concerns associated with ARCO's proposal to use an untested technology for a pipeline crossing of the Colville River that will connect the Alpine field and proposed transportation infrastructure in the northeastern NPR-A to the Trans Alaska Pipeline System. The DEIS does not address the issues regarding this new technology which will involve boring a hole beneath the frost bulb of the river through which a pipeline will be threaded. However, it assumes this technology will be used for future Colville River crossings even though this technology has yet to be field tested. The DEIS also discusses crossing "relatively wide rivers" by trenching and burying pipelines in the riverbed. This technology is also untested in the Alaskan Arctic.

Key aspects of a leasing program are not defined making it difficult if not impossible to adequately predict impacts. The DEIS fails to specify essential components of a leasing program for the northeast NPR-A, such as timing, frequency and size of sales. 012

The DEIS fails to adequately describe potential transportation infrastructure were development to be allowed in the northeastern NPR-A. The DEIS assumes that no major road networks will be built even though it does not contain strict stipulations prohibiting such road construction. The limited restrictions that are included (stipulations 24 and 28, DEIS, p. II-30) can be modified or waived. The specification in the DEIS that there would be only a single, short road connecting two drill sites within each oil field and no roads between oil fields is simply unrealistic viewed in the light of existing oil field infrastructure. While existing oil fields (including Kuparuk, Milne Point and Endicott) may have initially been described and even constructed as distinctly separate fields, over time the industry has argued successfully for connecting roads to the main Prudhoe field and Trans-Alaska pipeline terminus. There is simply no evidence to indicate fields within the NPR-A would not be connected to each other and to existing development to the east. Past experience has dictated that these connecting roads have been necessary for safety (including pipeline spill response), and for economic considerations related to costs of hauling gravel for construction and maintenance and transportation of workers and supplies. It is unreasonable to assume they will not be built, and by making this assumption, BLM has dramatically understated the effects of the transportation infrastructure that would be associated with oil field development in the northeast NPR-A. The impacts of a network of connecting access roads, as well as the extraction of gravel needed to construct these roads must be fully discussed. 013

There is also no adequate discussion of potential development of a road system to facilitate pipeline maintenance. And if there are to be no roads constructed for surveillance and maintenance, that would mean oil spill surveillance and response or pipeline repairs would be done using aircraft, which studies indicate would extremely disturbing to molting geese. The DEIS fails to adequately address the impacts of allowing all of this activity within the Teshekpuk Lake Special Area. 014 015

The DEIS fails to fully address the complete range of activities associated with oil exploration and field development in the planning area. As a result, the full scope of direct impacts was underestimated. The DEIS fails to adequately predict the impacts from gravel extraction for construction of oil fields. This is one of the most serious shortcoming of the DEIS. The amounts of 016

gravel needed for proposed development are significantly underestimated resulting in an unrealistic impacts assessment. The DEIS assumes each oil field constructed within the northeastern NPR-A will need only 100 acres of gravel. This is of concern because historically, gravel requirements have greatly surpassed There is also an inadequate discussion of sources of gravel and of the transportation infrastructure needed to bring gravel to oil field construction sites. 016

Cumulative Impacts

The DEIS fails to adequately consider cumulative impacts from oil and gas development in the northeastern NPR-A. BLM is obligated under NEPA to consider cumulative impacts that may occur throughout the NPR-A. There are a few scattered mentions in the DEIS of possible effects elsewhere in the NPR-A from leasing in the northeast corner, but this analysis is not rigorous or consistent. Cumulative effects are defined under CEQ regulations as "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of that agency (federal or non-federal) or person undertakes such other action," (40 CFR Sec. 1508.7.) At a minimum, the cumulative effects analysis for the northeastern planning area of NPRA should address the degree to which development in the planning area will exacerbate impacts associated with existing oil field operations elsewhere on the North Slope. In addition, an analysis of proposed development in the NPRA must include a discussion of potential activities on Native corporation lands within NPR-A and adjacent state and private lands, particularly in light of existing oil leases on ASRC lands within the NPRA, as well as state leases and proposed development in the Colville River delta. 017

The existing oil fields on Alaska's North Slope cover nearly 400 square miles of state lands between the Canning River to the east and the Colville River to the west. The cumulative effects of expanding oil development across the Alaskan Arctic have not been comprehensively addressed to date. In fact, most of this oil field development has proceeded on a piece meal basis without completion of an Environmental Impact Statement. For example, only three EIS's have been completed for oil field development on Alaska's North Slope. Among the cumulative effects that have never been adequately addressed are region-wide impacts to water and air quality, changes in hydrological regimes within the region and subsequent degradation of fish and wildlife habitat, loss of habitat, loss of wilderness values, impacts to subsistence resources, and loss of subsistence hunting and fishing opportunities.

The DEIS acknowledges that, "a lack of a comprehensive environmental analysis and land use plan for the entire North Slope...was highlighted by many people as a critical issue, citing the cumulative effects of past, present and future land use activities, particularly onshore and offshore petroleum development, on various resources and their uses," (DEIS, p. I-9). Nevertheless, the DEIS fails to adequately address these cumulative impacts and explain how proposed oil development in the NPR-A will expand or contribute to these impacts.

The DEIS fails to clearly articulate how proposed development in the northeastern NPR-A will be linked and in fact may facilitate development outside the area currently proposed for leasing, particularly reasonably foreseeable development to the north and west and subsequent direct and cumulative impacts from roads, staging areas, causeways, processing plants, and pipelines that would result from this development. The DEIS states that development proposed in the range of alternative presented, "...largely is analyzed in its relation to existing and producing fields; this 018

analysis does not speculate on development from myriad potential off- and onshore fields. The timing, location, development, resource levels, and infrastructure requirements of yet undeveloped (if not undiscovered) fields are a matter of extreme conjecture." (DEIS, p.IV-A-38). In determining potential impacts of proposed development in the NPR-A and how this development will facilitate and/or connect to other development in the region, it is reasonable to at least include all known oil fields, unitized areas, and areas with pending permits for development and construction. The DEIS failed to do so. 018

The discussion of existing development that are contained in the DEIS fail to adequately describe the full scope of development. For example, the DEIS refers to 141 miles of existing pipelines, those in the major "trunk line systems," (DEIS, p.III-C-56) and ignores the remainder of the nearly 1,100 miles of pipelines that thread through and between existing oil fields. The DEIS also does not address the road system in its entirety or describe how development in the NPR-A will connect to and expand this transportation infrastructure. 019

In 1987, an impact assessment of existing oil field development on the North Slope was done using was done using a time series of aerial photographs to measure direct and secondary effects, (Walker, et. al. 1987.) This represents the most rigorous attempt to evaluate cumulative effects conducted to date. Audubon recommends this work be updated as an initial step in completing an adequate cumulative effects analysis for the northeastern NPR-A. Results should include detailed maps at scale of 1:24,000 showing all facilities, as well as secondary effects of development such as impoundments, dust shadowing, culvert failures and oil spill sites. This kind of trend analysis would show rates of gravel fill and extraction, rates of construction of roads and pipelines, number of drill pads and production pads, and distance between roads, pipelines, and other facilities within each oil field and between oil fields. 020

The DEIS also fails to consider impacts from development on nonfederal lands within the planning area. BLM states that development on "lands owned by ANCSA regional or village corporations..." and other nonfederal laws within the planning area are not addressed in the DEIS (DEIS, p.1-2). But the effects of industrial activities they may occur on these lands as a result of opening the northeast NPRA to oil development cannot be ignored. Likewise, ongoing activities on these lands that may impact management decisions in NPRA must be considered. BLM must consider cumulative effects in order to comply with NEPA. It is reasonable to expect oil development to occur on these lands, and for this development to be linked to development in NPRA as well as impact resources in NPRA. 021

There are also cumulative effects to be considered to the northeastern NPR-A from offshore development to the north. For example, in its final EIS for OCS Sale 144 off the coast of the NPRA, MMS presumed that as many as six oil spills averaging 7,000 barrels could occur in the Beaufort, resulting in losses of seabirds, waterfowl, and shorebirds. These effects need to be considered with those that could occur from proposed development within NPR-A in order for the public to have a clear picture of the environmental effects of the actions described in the range of alternative presented in the DEIS. 022

Pipelines crossing the northeast NPR-A would have direct and indirect effects on fish and wildlife and subsistence uses which have not yet been analyzed. The Final EIS for OCS Sale 144 does not provide an adequate evaluation of the impacts of an onshore pipeline servicing the sale area. By 023

arbitrarily ignoring the effects of pipelines crossing NPR-A from offshore leases, or others "outside the planning area," BLM fails to evaluate whether the effects from these transportation facilities and access routes, and their supporting infrastructure and industrial activity, could be much greater than from oil field development within the northeast NPR-A. It is highly likely that onshore support facilities, helicopter traffic and causeways would be required to support offshore fields, especially within the sensitive coastal zone. Due to the sensitive nature of the nearshore coastal zone, it may be more likely that there would be onshore processing facilities, etc. The combination of facilities for offshore development, including the essential onshore connecting pipelines, plus onshore oil fields is not analyzed in the DEIS. 023

One of the most serious cumulative effects that may be expected elsewhere in NPRA is from development of a road network which could in turn pose negative environmental impacts from coal and other development that could become economic to transport as a result of the roads. Some of the most significant issues that need to be considered include impacts to the Western Arctic caribou herd, effects on the coastal environment (especially habitats used by migratory birds, fish, caribou, and marine mammals), spectacled and Steller's eider habitat, and subsistence. 024

In summary, the time to address balancing development and conservation within NPRA and the North Slope is now, in the planning process, before we have made irreversible commitments to an infrastructure that become a stepping stone to a variety of other, unplanned, developments. We have an unprecedented opportunity to look at the big picture within NPRA and the North Slope. But we have yet to take advantage of this opportunity. If we do not address cumulative effects analysis now, we run the risk of foreclosing important conservation options. In our scoping comments, Audubon strongly recommended to BLM the importance of taking a long-term, landscape perspective in planning for the single largest block of public land in Alaska. With GIS technology and the science of conservation biology we have the tools and, if we act now, still have the time and conservation options to prevent ending up with unacceptable strip development across this vast Arctic ecosystem. Unfortunately, the DEIS has not substantively addressed this fundamental task. This serious flaw must be corrected.

Potential Impacts Outside the Planning Area

The DEIS did not address potential impacts of leasing and oil development outside the planning area. However, oil leasing and development in NPR-A may greatly affect the public values of migratory bird resources well beyond the North Slope. The absence of an impact analysis regarding the national and international values of waterfowl, shorebirds, and other birds is a major deficiency in the DEIS. We are particularly concerned that it fails to adequately discuss how U.S. obligations under international treaties and agreements for the protection of shared resources will be met by the proposed management alternatives. The DEIS also neglects discussion of the effects of industrial development in NPRA on regional agreements such as the Yukon-Kuskokwim Delta Goose Management Plan and waterfowl flyway management plans. 025

The United States has treaties for the protection of migratory birds with Canada (1916), Mexico (1936), Russia (1976), and Japan (1979), and several international agreements: the North American Waterfowl Management Plan with Canada and Mexico which includes the Arctic Goose Joint Venture Program; the 1996 "Area V" agreement between the U.S. and the Russian Federation on protection of the environment and natural resources that focuses on spectacled and Steller's 026

eiders and geese; and the Arctic Environmental Protection Strategy signed by the eight Arctic nations. Many NPRA waterfowl populations are managed through the four North American Flyway Councils, including Pacific brant managed under a 1992 plan by the Pacific Flyway Council, greater white-fronted geese under a plan by the Central and Mississippi Flyway Councils, and Tundra Swans are covered by a management plan by all four flyway councils. Failure of the DEIS to address these issues is a significant oversight. 026

Stipulations:

Alaska Audubon is concerned about the strength and effectiveness of the stipulations. The DEIS states that, "Restrictions on development (lease stipulations) will not adversely affect the viability of potentially commercial discoveries," (DEIS, p. IV-A-26.) Basing the promulgation of all lease stipulations on this premise suggests that oil production has precedence over effective environmental mitigation, and creates a blanket provision for modification or waiver that makes the stipulations soft or meaningless. The list of instances in which all the stipulations can be modified or waived (DEIS, p.11-27), as well as specific provisions contained in most of the stipulations regarding modification and waiver, are so broad and vague, we are seriously concerned about their effectiveness. 027

For example, key environmental protection stipulations in alternative D for the Teshekpuk Lake caribou habitat LUEA and alternative H for the Teshekpuk Lake caribou habitat and goose molting habitat LUEAs can be modified or waived "if the lessee can demonstrate that the restrictions would make production technically infeasible or economically prohibitive, and can demonstrate that the goals of the stipulation can be accomplished through alternative means," (DEIS, p. II-27.) This loophole fails to meet the "maximum protection" standard set for the Special Areas in the NPRPA. 028

The DEIS contains no scientific evidence that the stipulations will be adequate in mitigating impacts to an acceptable level. To our knowledge, no systematic review of the effectiveness of individual stipulations has been completed, but stipulations similar to those in the DEIS have failed to prevent habitat loss and degradation elsewhere across the North Slope. 029

The stipulations contained in the DEIS for the Teshekpuk Lake and Colville River Special Areas were promulgated with the assumption that all impacts can be mitigated to the extent that the "maximum protection" required pursuant to the NPRPA for surface resources in these Special Areas is provided. However, the analyses in the document, particularly the workshop proceedings in Appendix E, and discussions with knowledgeable scientists suggest that the proposed stipulations are only guidelines, not guarantees, that significant impacts will not result. Clearly, there is a high degree of uncertainty surrounding the ability of the stipulations to mitigate impacts. Only closure of these areas to leasing and development (including prohibition of transportation and support facilities infrastructure) can guarantee impacts will not occur. Considering the high value of these surface resources and the high degree of uncertainty associated with our ability to mitigate development impacts, it would be irresponsible to risk jeopardizing our conservation responsibility by depending on unproven stipulations.

Seventy-five of the 82 stipulations are proposed as conditions of specific permits. We are concerned that the majority of the stipulations are not generally applicable to actions within the NPRA. This seems to be contrary to the intent of the interagency process used to develop the 030

stipulations. If they are not generally applicable, we are concerned that the public and management agencies will not have sufficient influence on decisions regarding individual permit applications. 030

Stipulation 1 should apply across the board regardless of size of the operation. Garbage disposal must be managed properly or there will be a problem with wildlife attractants and the strong likelihood of nuisance wildlife problems including defense of life and property kills of bears and other wildlife. 031

Stipulation 24 is unlikely to provide all the data needed to determine facility design and location. 032

Terminology such as "economically feasible" (Stip 29) and "major river" (Stip 42) should be clearly defined. 033

There should be a stipulation requiring exploration, development, and production activities to be compatible with the maintenance of productive fish and wildlife populations just as there is a stipulation (64) requiring compatibility with subsistence activities. 034

Stipulation 78 would provide subsistence users access through oilfield facilities and roads to goose molting areas. This raises a major concern that increased human access could displace molting geese in these critical habitats. This could be a significant impact of oilfield development within the critical wildlife habitats of NPRA. 035

Additional Concerns

The evaluation of impacts from major oil spills, chronic spills and spills to marine waters contained in the DEIS does not adequately assess direct effects and does not include a discussion of indirect effects. 036

The DEIS does not provide objective criteria for defining the extent, intensity, and duration of effects on fish and wildlife habitats and populations, subsistence and other include resources. Scientific justification for the criteria, as well as citations for impact levels needs to be provided. 037

Comparisons of impacts in Table II.D.2. (DEIS, pp. II-41 to II-71) do not specify which impacts are considered major or minor. In addition, it appears the assumption was made that all first sales would be the same for Alternatives B-E, even though significant differences exist between these alternatives. This is not realistic. 038

For the "multiple sales" scenario described for Alternative E, the DEIS claims that, "displacement of birds from disturbance and habitat alternation or loss is expected to increase substantially throughout most of the planning area ... but not significantly affect planning area populations." (DEIS, p. II-52.) The DEIS offers no evidence to substantiate this statement. 039

The DEIS asserts that as a result of the levels of development allowed in Alternatives D and E, "...near the oil fields, surface, air and foot traffic are expected to increase significantly [over that which would occur under Alternatives A-C] and to displace some terrestrial mammals, but not significantly affect Arctic Slope populations." While this statement may categorically be true (particularly if the Western Arctic herd is counted as part of "Arctic Slope populations"), it fails to 040

recognize the severity of impacts to the Teshekpuk Lake herd, a locally important subsistence resource. 040

In its discussion of impacts if development were to proceed under Alternative E, BLM fails to adequately describe the impacts of disturbance, habitat loss and oil spills to molting geese in the Teshekpuk Lake Special Area and the goose molting LUHA. 041

In its ANILCA Section 810 review summarized in Appendix D, BLM concluded that Alternatives D and E would significantly restrict subsistence uses, but does not find that subsistence resources would not become unavailable, undesirable for use, or experience overall population declines, even though such affects are discussed earlier in the Environmental Consequences section of the DEIS. 042

There was no consideration of wilderness designation for any portion of the NPR-A. This should have been addressed. 043

Summary

- The DEIS does not explicitly demonstrated how NPRA oil "reserves" will be managed in the best, long-term interest of the Nation. The DEIS also fails to provide a clear and compelling rationale for why leasing in the reserve must occur now in the absence of a national energy policy.
- Alaska Audubon does not support a decision to lease oil reserves in the northeastern planning area of NPRA at this time.
- However, if the Secretary of Interior makes the decision to lease within NPRA, Alaska Audubon strongly urges the Secretary to develop and select a new alternative that protects the important wildlife values of both Teshekpuk Lake and Colville River Special Areas as well as several other riparian corridors within the planning area. As currently presented in the DEIS, none of the leasing alternatives (B-E) provide adequate protections for the areas fish, wildlife, recreational, or subsistence values.
- Alaska Audubon requests the Secretary to withdraw the Teshekpuk Lake and Colville River Special Areas from leasing and development (including the construction of roads, pipelines, and other surface infrastructures). We also request the Secretary seek permanent protection for these Special Areas through legislative action.
- Other important wildlife areas Audubon recommends for protection include Fish and Judy creeks and Ikpikpuk, Kikiakrorak, and Kogosukruk rivers. These important areas should be provided with conservation buffers (as identified in Alternative B) which prohibit surface occupancy including roads, surface pipelines, and other oil field infrastructures.
- The DEIS did not identify a preferred alternative among the five presented. This does not provide reviewers an opportunity to respond to a likely management scenario. We urge BLM

to provide a public review and comment period on their selected alternative prior to issuing a final EIS and Record of Decision.

- The DEIS did not complete an acceptable cumulative effects analysis regarding wildlife impacts associated with leasing and oil field development. BLM managers must incorporate a long-term, landscape perspective in their planning for the largest single block of public land in Alaska. Each individual development will contribute incrementally to cumulative environmental impacts. We strongly recommend that the FEIS include a new, responsible cumulative effects analysis. Only by taking this action now can we avoid a future condition of unplanned strip development across this vast Arctic ecosystem.

We appreciate the opportunity to provide BLM Audubon's comments and recommendations on the Integrated Activity Plan and Environmental Impact Statement for the northeast corner of NPRA. Alaska Audubon supports responsible economic development that is in balance with protecting the ecological integrity of our northern ecosystems. Healthy, productive ecosystems are fundamental for ensuring a sustainable economy for Alaska and maintaining the quality of our outdoor-oriented life style shared and valued by all Alaskans. We strongly encourage you to consider our recommendations and take appropriate actions to protect the significant wildlife and wildland values of this internationally important Arctic ecosystem.

Sincerely,

John W. Schoen, Ph.D.
Executive Director

cc: Secretary Bruce Babbitt
Governor Knowles
ADF&G Commissioner Frank Rue
Audubon Policy Director Dan Beard

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1664-001
Please see Response 1851-002.

1664-002
Please see Response 1851-058. The response gives the reason permanent protection measures, such as wilderness designation, are not proposed in an alternative. The Preferred Alternative prohibits gravel roads connecting to a road system outside the planning area. (See Stipulation 48 for the Preferred Alternative.) For a discussion of stipulations, please see Response 1851-060.

1664-003
Please see Response 1851-054.

1664-004
Please see Response 1851-058. The response provides the rationale for why permanent protection measures, such as wilderness designation, are not proposed in an alternative. The Preferred Alternative restricts oil and gas facilities near all of the streams named in this comment. Preferred Alternative Stipulation 39 describes restrictions in the riparian areas.

1664-005
Bird Conservation Areas (BCA') are part of the overall strategy of conservation planning within Partners in Flight (PIF). The PIF is a program initiated by the National Fish and Wildlife Foundation to promote the conservation of bird diversity in North America. The PIF is not an organization but a cooperative effort. Participants in PIF include nongovernmental organizations, State/Provincial and Federal Agencies, academicians, and private industry from several nations.

The BCA's are large areas that sustain or are capable of sustaining healthy populations of birds. Typically, BCA's include multiple cooperating landowners who voluntarily coordinate their management practices to provide a constant base of habitat needed by birds. Management practices to promote bird conservation in these areas must be compatible with other social and economic priorities.

The BCA's involve varied landowners. In the case of the proposed BCA along the Colville River, the landowners would be the United States (through the Bureau of Land Management), the State of Alaska, and the Arctic Slope Regional Corporation. The BCA's are voluntary agreements among landowners, and any owner could terminate the agreement at any time. There are no Federal laws or regulations that address BCA's; therefore, there is no related Federal authority to ensure protection of riparian habitat on State or private lands.

1664-006
Potential effects of air traffic are discussed in Sections IV.B.8.a.(2)b and IV.C.8.b(1)(b), citing the same references as the comment. There is little doubt that air traffic will increase if oil and gas development occurs. Most likely, fixed-wing aircraft will disturb the geese less than helicopters, and attempts to fix the quantity of air traffic at this point is quite speculative. The comment stating that aircraft access will be increased requires estimates of activity levels that currently also would be speculative. The EIS discusses energetic consequences of disturbance (See. IV.C.8.b(1)); it should be noted that a model that estimates the immediate effect of disturbance (weight loss) has been calculated only for brant. The ultimate effect of such loss on survival, successful migration to their staging or wintering areas, or recruitment of subadults into the breeding population is considerably beyond the capability of current datasets; therefore, the effect is not discussed in this EIS.

1664-007
There is no doubt that the Colville River and several other rivers in the planning area provide regionally important raptor (and passerine) habitat. Additional material on raptors is in Sections III.B.4.d, IV.C.8.b(i)(e), and IV.C.8.b(2) of the EIS. Potential effects of gravel mining along the Colville River has been added to Section IV.H.8. Occurrence of gravel is discussed in Section III.A.1.d of the document.

1664-008
The BLM believes that the schedule for producing the IAP/EIS has afforded adequate time to analyze the resources, uses of the planning area, the impacts future activities may have on them, and time to gather and consider public input.

1664-009
Potentially adverse effects from roads, gravel mining, contaminating oil, and aerial and ground disturbances are discussed in Sections IV.B.8, IV.C.8, IV.F.8, and IV.G.8. Conclusive evidence or comprehensive information to accurately determine the effects is lacking for most species. The BLM thoroughly reviewed the literature to support the statements in these sections. References with peripheral information or that duplicates other works are not cited. This eliminates long sequences of citations and makes the document more readable.

Bird species that are considered unlikely to breed or rarely occur within the Northeast NPR-A Planning Area were not included in this analysis. The red knot, white-rumped sandpiper, and bluethroat generally are listed as casual visitant, accidental, or uncommon migrant (Derksen, et al., 1981; Johnson and Herter, 1989). Observations of these species generally are more common west of the planning area. Given this low level occurrence, it seems unlikely that oil and gas activities would cause adverse effects to more than an insignificant proportion of the population. Black guillemots are marine birds, and it is unlikely they will be adversely affected by primarily onshore activities. They are uncommon except at Cooper Island to the west, where their presence has been artificially enhanced. Substantive biological information is scant for many species that occur on the arctic plain, although those that occur in the area from Teshekpuk Lake to east of Prudhoe Bay have received comparatively greater attention.

The information cited as lacking concerning the effects of road presence on various shorebird species is discussed in Sections IV.B.8.a and IV.C.8.b.

Regarding potential effects on spectacled eiders given several areas of higher concentration, these total <30 mi^2 in extent and have about 0.5 to 1.6 birds/km^2. At these densities, it does not appear likely that a large proportion of the spectacled eider population breeds in the northeastern NPR-A or that large number of these eiders would be disturbed severely, but the nesting efforts of one to a few pair may be displaced or disturbed sufficiently at each long-term site of activity to be terminated, thereby affecting productivity to a small extent. This is not expected to be a significant result at the population level. Ground surveys in the Prudhoe Bay area indicate there may be many more spectacled eiders across the Arctic Slope than previously estimated; however, this still does not suggest that a large proportion of the population (estimated 140,000 individuals) breeds in the northeastern NPR-A. Greater ground-survey effort certainly is needed to verify the potential population effects of activities associated with oil and gas development. The ongoing BLM-FWS project correlating vegetation types and breeding effort will allow a more accurate estimation of likely spectacled eider use of the NPR-A.

1664-010
Please see Response 1664-028. The Preferred Alternative would not allow oil and gas leasing in the northern portion of the Teshekpuk Lake Special Area, including the Goose Molting LUEA. The alternative would prohibit permanent oil and gas facilities in and adjacent to portions of the Special Area. Please also see Response 1851-056.

1664-011
Please see Responses 1334-004, 1652-031, and 1660-081 addressing the Alpine field as an analog for future development in the NPR-A.

Regarding incremental development using Alpine as a stepping stone to the NPR-A, the BLM believes it is

reasonable to expect that new oil field development to the west will attempt to use Alpine's infrastructure—particularly the pipeline corridor connecting to the TAPS. The installation of permanent roads in the NPR-A is limited by Preferred Alternative Stipulation 48, and is not likely because of the lack of identified gravel sources and overall expense of road construction and maintenance. It is more likely that winter ice roads will be used to haul heavy supplies and equipment to remote sites in the NPR-A. The ultimate appearance and scale of development in the NPR-A is analyzed in the Cumulative Case (Sec. IV.H). Using Prudhoe Bay/Kuparuk as an analog is definitely not supported by recent petroleum resource estimates for this area. Together, these two North Slope fields contain more than 15 Bbbl of reserves or >30 times the undiscovered economically recoverable estimates for the NPR-A (Fig. III.A.1.a(3)-9).

The State and Federal regulatory agencies approved the Alpine pipeline system after a field demonstration of boring technology and a thorough review of all engineering design aspects. Although Alpine is the current representative model, we anticipate that the learning experience associated with this project would carried into the designs for future pipelines in NPR-A.

Regarding the issue of pipeline trenching as unproven technology in the Alaskan Arctic, the installation of pipelines carrying oil and gas is standard practice in many areas throughout the world. The technology is very simple; dig a trench, lay the pipeline, backfill the trench to protect the pipeline. Because of many reasons, including aesthetics and future maintenance costs, many new utility and power lines are installed underground. Unique ground conditions present in the Arctic (permafrost) are well-known and a variety of engineering concepts can be employed to safely install and maintain subsurface pipelines.

1664-012
Please see Response 1851-052.

1664-013
Please see Response 1851-011 for reasons behind the roadless development assumption.

1664-014
The issue of "roadless" development has been raised by several other commenters. Please see Response 1851-011 for reasons behind the assumption. In addition, note that the Preferred Alternative restricts permanent road development (stipulation 48).

"Roadless" development will not preclude access to inspect and repair the pipeline, although the transportation means will change with the seasons. During the winter months, access to conduct visual inspections could be by nearby ice roads, by snowmobiles (if ice roads are not present), and by aircraft. During summer months, visual inspections largely will be conducted by aircraft. Seasonal restrictions on aircraft operations will be enforced to protect sensitive wildlife from disturbance (Preferred Alternative, Stipulations 53 and 54). Furthermore, under the Preferred Alternative pipelines will be prohibited in sensitive goose molting areas. Hovercraft also might be employed, particularly in periods where the ground is wet (as opposed to frozen). Pipeline repairs likely will use the same forms of transportation. Should an emergency pipeline repair be necessary, an onsite evaluation will consider the effects of various strategies. It should be noted that pipeline monitoring is largely by remote instrumentation and will increase in the future. Numerous monitoring and safety systems are installed to provide redundancy in these electrical and mechanical safety systems.

1664-015
The potential effects of air traffic on molting geese in the Teshekpuk Lake Special Area are discussed in Sections IV.B.8 and IV.C.8.

1664-016
The BLM believes the gravel requirements projected in the IAP/EIS are realistic. They are based on current technology that requires considerably less gravel than earlier development on the North Slope. The scarcity of gravel in the NPR-A also discourages its use. The final IAP/EIS expands the discussion of potential impacts from extraction of gravel.

1664-017
The cumulative impact analysis addresses a broader range of existing and potential future developments and development on Native-owned lands near Nuiqsut. Please see Response 1851-025.

1664-018
A development scenario for the planning area, including an analysis of proposed roadless development, is discussed in Section IV.A.1. Section III.A.1.a(2) includes an extensive discussion of existing oil fields and fields pending development.

1664-019
Please see Responses 1851-026 and 1851-027.

1664-020
The study would be an interesting and valuable one but is beyond the scope of the current planning process. The Interagency Research and Monitoring Team should consider this proposal.

1664-021
The final IAP/EIS incorporates an analysis of oil and gas development on Native-owned land near Nuiqsut. Please see Response 1851-025.

1664-022
Please see Responses 1851-025 and 1851-033.

1664-023
In addition to projects noted in Table IV.A.5-1 of the EIS, the cumulative case analysis includes the effects of three hypothetical development scenarios that could affect resources in the Northeast NPR-A Planning Area (Sec. IV.H). Three scenarios have been hypothesized to analyze the effects on the resources in and adjacent to the planning area from development in (1) the marine environment north or northwest of the planning area, (2) in the central part of the NPR-A west of the planning area, and (3) on Native lands near Nuiqsut. Please see Response 1851-025.

1664-024
The cumulative impact analysis addresses the construction of a road linking hypothetical oil and gas development west of the Ikpikpuk River to the Alaskan road network via the planning area and Deadhorse. This type of road would not factor into the cumulative analysis of the Preferred Alternative because that alternative prohibits such a road. The analysis does not discuss impacts from coal development. The BLM believes that any coal development most likely would require a link to saltwater through the road associated with the Red Dog Mine.

1664-025
Statements indicating the expansive range of birds using the planning area, the types of stakeholders having interests in these birds, and some implications of international agreements concerning conservation and management of birds have been incorporated into Section III.B.4. Although a statement has been added to Alternative B (Sec. IV.C.8.b(5)) regarding this topic, an assessment of potential impacts of leasing and development on stakeholder interests would be difficult at this time. This is because of a lack of pertinent data on the use of the different species by specific user groups, and the correlation between bird losses on the northeastern NPR-A and decreased numbers in migration and wintering areas. With regard to molting geese, the Goose Molting Habitat LUEA is unavailable for oil and gas leasing under Alternatives A through D and the Preferred Alternative. This suggests that potential effects from this activity would not be large enough to significantly affect their use by local or distant user groups. See also response to comment 1450-

001.

1664-026
Please see Response 1164-025.

1664-027
The quote from Section IV.A.1.b.(7) (a) is an assumption that was made to generate the activity schedules (Tables IV.A.1.b-2 and IV.A.1.b-3). Under Leasing Alternatives, it is stated that "Restrictions on activities could affect project viability, leading in some cases to the abandon-ment of marginal fields." The concerns, terms, and conditions under which an exception to the stipulations may be granted were considered during the development of the Preferred Alternative Stipulations (Sec. II.C.7). Also, please see Response 1951-002.

1664-028
Stipulations are designed to protect various resources and uses of the planning area. The passage indicates that modifications and waivers could only be granted if the lessee "can demonstrate that the goals of the stipulations can be accomplished through alternative means." Therefore, the same or greater level of protection would be offered with or without the modification or waiver. Please see Response 1851-056 regarding "maximum protection." Also, please see Response 1951-002.

1664-029
Stipulations and exceptions (in the EIS) were specifically developed for each alternative so that the effectiveness could be evaluated and potential impacts of each alternative identified. A preferred alternative was developed on the basis of that evaluation and public comment. Please refer to Section II.C.1 for a description of the Preferred Alternative and Section II.C.7 for associated stipulations. Also, please see Response 1851-056.

1664-030
This comment is addressed. All Preferred Alternative Stipulations will be attached to the lease.

1664-031
This comment is addressed in Preferred Alternative Stipulation 2.

1664-032
This comment is addressed in Preferred Alternative Stipulation 29.

1664-033
A list of "major rivers," as referenced in Preferred Alternative Stipulation 41, is defined by the list in Preferred Alternative Stipulation 39, or as identified by the Authorized Officer in consultation with appropriate Federal, State, and NSB regulatory and resource agencies.

Please see Response 1664-002.

1664-034
"Compatibility" is an exclusive term used in reference to ANILCA Sec. 810, which is designed to evaluate and prevent restrictions and impacts on subsistence uses. In general, all the Preferred Alternative stipulations are intended to protect surface resources such as fish and wildlife.

1664-035
Alternatives A-E Stipulation 78 has been deleted from the Preferred Alternatives Stipulations. Under the Preferred Alternative, leasing, exploration, development, and construction of permanent oil and gas facilities including roads is not allowed in the Goose Molting LUEA during the life of the Integrated Activity Plan.

1664-036
The EIS analysts did review the discussion on oil-spill effects and considered both direct and indirect effects of oil spills to be adequately addressed. Oil-spill effects on marine water quality are only direct effects. Direct effects are discussed in Section IV.H.4 of the final EIS (Sec. IV.G.4 of the draft EIS).

These and other effects of spills are discussed in Appendix B, Section I. of the FEIS. Much of the information has been summarized and referenced from recent analyses in EIS's for marine oil and gas lease. Summarizing the information reduces the size and redundancy and makes the EIS easier to read.

1664-037
An objective criteria to define the extent, intensity, and duration of effects on fish and wildlife habitats and populations are lacking or speculative. The criteria are not available because of the tremendous variability in the Arctic region. Comprehensive explanations of causal relationships have been determined for extremely few species or specific effects factors. The EIS estimates on the potential effects on fish and wildlife populations are based on the best available information and the populations known distribution and abundance in the planning area.

1664-038
Classifying impacts as major or minor might be useful for some readers. However, a classification is subjective and generally requires the terms be defined for each of the resources or groups of resources. Also, there is the likelihood of disagreements over attempts to define terms as major or minor.

Regulations for implementing NEPA provisions require the discussion of direct and indirect effects and their significance. Regulations do not require that the effects be classified as major or minor.

Table II.D.2.C-1 is a comparative summary of the conclusions. The conclusions are based on the analysis (Secs. IV.B through F). The assumptions that are part of the analysis for each of the resources under each of the alternatives are noted in these sections.

1664-039
Section IV.F.8.b has been revised. The section clarifies statements and citations regarding potential displacement, habitat alteration effects, first sale, and multiple sales.

1664-040
The BLM recognizes the serious effects on the Teshekpuk Lake caribou habitat (used for calving north and east of the lake) if full development occurs under Alternative E. Futhermore, this effect is expected to persist over the life of the oil fields (see Sec. IV.F.9.a.(2)(a), Effects of Disturbance).

1664-041
Information on general impacts in Goose Molting Habitat LUEA is presented in Alternative E. Please see Sections IV.B.8 and IV.C.8 for specific effects of disturbance, habitat loss, and oil spills.

1664-042
Please see Response 1660-098.

1664-043
Please see Response 1851-058.

1665

Alaska State Legislature

HOUSE OF REPRESENTATIVES
Alaska State Capitol Juneau, Alaska 99801-1181

March 10, 1998

Mr. Gene Terland, NPR-A Project Coordinator
Bureau of Land Management
Alaska State Office
222 West 7th Avenue
Anchorage, Alaska 99513

Mr. Terland,

The undersigned support Alternative E in the Draft Environmental Impact Statement for the NPR-A Northeast Corner. The NPR-A was originally established as an oil reserve, therefore, all BLM lands in this area should be made available for oil and gas leasing.

Alternatives A through D do not allow access to the critical Barrow Arch, the area with the greatest potential for hydrocarbon discovery. Unless this access is granted, we fear that interest in the upcoming NPR-A lease sale will wane.

We believe that technological and operational advances in the exploration, production, and transportation of hydrocarbons in the arctic, as proven over the last 20 years, will allow operators to meet Alaskans' high standards for the protection of wildlife and habitat.

Alternative E allows for the highest and best use of the NPR-A. Thank you for considering our comments.

Sincerely,

Representative Gail Phillips
Speaker of the House

Representative Brian Porter
House Majority Leader

Representative Richard Foster
House Majority Whip

Representative Ramona Barnes, Chair
Legislative Council

Representative Mark Hanley, Co-Chairman
House Finance Committee

Representative Gene Therriault, Co-Chairman,
House Finance Committee

Representative Joe Green, Chairman
House Judiciary Committee

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Representative Bill Hudson, Co-Chairman
House Resources Committee

Representative Scott Ogan, Co-Chairman
House Resources Committee

Representative Jeannette James, Chair
House State Affairs Committee

Representative Norman Rokeberg, Chairman
House Labor & Commerce Committee

Representative Ivan Ivan, Chairman
House Community & Regional Affairs Committee

Representative Bill Williams, Chairman
House Transportation Committee

Representative Terry Martin
House Finance Committee

Representative Eldon Mulder, Vice-Chairman
House Finance Committee

Representative Gary Davis
House Finance Committee

Representative Tom Brice
House District 30

Mr. Gene Terland
March 10, 1998
Page 3

Representative Alan Austerman, Chairman
House Special Committee on Fisheries

Representative Beverly Masek, Chair
House Special Committee on Military & Veterans Affairs

Representative Pete Kelly
House Finance Committee

Representative Vic Kohring
House Finance Committee

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1666

March 12, 1998

NPR-A IAP/EIS Planning Team Members
Bureau of Land Management
Alaska State Office 930
222 West 7th Avenue
Anchorage, Alaska 99513

Dear Planning Team Member:

The purpose of this letter is to comment on the Bureau of Land Management's December 1997 Draft Integrated Activity Plan/Environmental Impact Statement ("Draft") for an oil and gas leasing program within the Northeast part of the National Petroleum Reserve-Alaska (NPR-A).

The Draft puts forth five alternatives for the multiple-use management of 4.6 million acres in Alaska's North Slope Borough. Four alternatives accommodate oil and gas leasing. They also call for new management areas for special protection, including the recommendation that Congress designate most of the Colville River and adjacent lands as a National Wild and Scenic River and the creation of a Bird Conservation Area.

The permanent reclassification or withdrawal of land in NPR-A would violate the clear intent of Congress, which, upon creating 106 million acres of new conservation lands under the Alaska National Interest Lands Conservation Act (ANILCA), declared in Section 101(d):

> [ANILCA] provides sufficient protection for the national interest in the scenic, natural, cultural and environmental values on the public lands in Alaska, and at the same time provides adequate opportunity for satisfaction of the economic and social needs of the State of Alaska and its people; accordingly, the designation and disposition of the public lands in Alaska pursuant to this Act are found to represent a proper balance between the reservation of national conservation system units and those public lands necessary and appropriate for more intensive use and disposition, and thus Congress believes that the need for future legislation designating new conservation system units, new national conservation areas, or new national recreation areas, has been obviated thereby.

ANILCA anticipated oil and gas leasing in NPR-A; for example, sections 1431(e) and 1431(o) recognized that Native corporations would want to realign their land selections when NPR-A lands became available for leasing. Ten days after ANILCA was made law, a law to authorize petroleum production in NPR-A was enacted.

The Bureau of Land Management now asks Alaskans to barter away favorable terms regarding the status and economic use of public lands, secured in Congress in 1980, in exchange for the opportunity to conduct leasing activities authorized by Congress that same year.

The Arctic region's ecosystems are delicate. Congress knew this in 1980, even better than it could then conceive of the technological advances that now permit development with hardly a fingerprint. Permanent reclassification or withdrawal of NPR-A land is not needed to protect the environment. I hope the Bureau of Land Management will consider my views.

Sincerely,

TED STEVENS

1667

COMMENTS ON THE NORTHEAST NATIONAL PETROLEUM RESERVE--ALASKA DRAFT ENVIRONMENTAL IMPACT STATEMENT

March 12, 1998

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Attorney for Pacific Legal Foundation

INTRODUCTION

Pacific Legal Foundation (PLF) is a nonprofit, public interest law corporation based in Sacramento, California, with litigation offices in Bellevue, Washington; Stuart, Florida; Honolulu, Hawaii; and a liaison office in Anchorage, Alaska. PLF has over 20,000 supporters throughout the United States, including Alaska, and has the primary purpose of litigating in the public interest in the defense of individual freedoms, private property rights, and free enterprise.

Since its establishment in 1973, PLF has engaged in research and litigation over a broad spectrum of public interest issues. With regard to such issues, PLF has advocated a balanced approach that takes into account the relevant social, economic, and environmental costs and benefits, one which recognizes that governmental actions should be confined to a legitimate scope of authority.

One of the basic philosophies of PLF is that the development of governmental policy for environmental and land use issues should be grounded in a proper recognition of federalism and include concern for the economy, employment, property rights, and general welfare of the public, as well as concern for the environment. In short, PLF advocates a broad view of the public interest and seeks to ensure that the national government acts with balance and common sense in adopting, interpreting, and administering laws and regulations.

PLF attorneys have represented a variety of resource users in Alaska and are especially concerned that the future management decisions for the National Petroleum Reserve--Alaska (NPR-A) accurately reflect the needs of all concerned. Because of the importance of the

NPR-A, PLF makes the following comments on the Northeast National Petroleum Reserve--Alaska Draft Environmental Impact Statement (DEIS).[1]

COMMENTS

A. Alternative E Is The Only Management Plan Consistent With Congressional Intent

Our constitutional form of government requires that executive agencies carry out their objectives in compliance with Congress' statutory mandates. Accordingly, the alternative selected by the Bureau of Land Management (BLM) must support and conform to existing legislation applicable to Alaska and the NPR-A. Focusing on the will of Congress, PLF supports the selection of Alternative E because it is the only management plan consistent with congressional intent.

Congress stipulated that oil and gas leasing shall be conducted in the NPR-A and authorized the Secretary of the Department of Interior (Secretary) to mitigate any adverse environmental impacts while allowing reasonable development to proceed. 42 U.S.C. § 6508. In Section 6508, Congress stated in part:

> There shall be conducted, notwithstanding any other provision of law and pursuant to such rules and regulations as the Secretary may prescribe, an expeditious program of competitive leasing of oil and gas in the National Petroleum Reserve in Alaska: Provided, that (1) activities undertaken pursuant to this section shall include or provide for such conditions, restrictions, and prohibitions as the Secretary deems necessary or appropriate to mitigate reasonably foreseeable and significantly adverse effects on the surface resources of the National Petroleum Reserve in Alaska . . . .

[1] Russell C. Brooks, Pacific Legal Foundation Law Clerk, assisted in the preparation of these comments.

Accordingly, Section 6508 does not give the Secretary the discretion not to lease; instead, it provides the Secretary with discretion to promulgate rules and regulations regarding the conduct of leasing and to develop restrictions necessary to mitigate adverse impacts on the NPR-A. Alternative E opens the entire planning area to oil and gas exploration and is the only alternative consistent with the standards Congress prescribed for the development of oil and gas resources within Alaska and the NPR-A. Alternative E, in conjunction with sound mitigation measures, allows for the maximum benefit from exploration at the least environmental cost.

B. National Security, Alaska's Economy, and Technological Advances in Exploration Are Important Considerations

Evaluation of the alternatives must include consideration of both the national welfare and the economic well-being of the State of Alaska. An increasing reliance on foreign imports constrains the national economy and jeopardizes the Nation's security. Furthermore, declining production in existing energy sources in Alaska results in a loss of revenue for the state in an area upon which it substantially relies. Therefore, finding and developing new energy and revenue sources is crucial to sustaining the Nation's welfare and Alaska's economy. Alternative E most effectively addresses these needs by opening the entire planning area to exploration at a time when it is increasingly important.

Recent technological advances allow for the required increase in exploration while substantially reducing the environmental impact. One example of environmentally conscious oil exploration is an exploratory well drilled near Kaktovik, Alaska, in 1985-86. Construction of the well and drilling operations was conducted in close coordination with the United States Fish and Wildlife Service. Construction included a single ice road, one ice airstrip, and only a five-acre drilling pad. Upon completion of the drilling operation, the area was revegetated. Wildlife in the

area was not affected by the operations. *See* Frontier Communications, "Artic Power," Arctic National Wildlife Refuge (visited March 11, 1998) <http://www.anwr.org/techno/interact.htm>. Advances made in drilling techniques, including horizontal production wells, multilateral wells, and designer wells, have resulted in more precise and efficient exploration. *Id.* at <http://www.anwr.org/techno/drilling.htm>.

These advances in conjunction with sound mitigation measures ensure that exploration takes place in an environmentally responsible manner, allowing Alaska and the nation as a whole to reap the benefits of exploration while preserving the environment. The substantial benefit of exploration in light of the minimal environmental impact mandates the opening of the entire planning area.

C. Only Those Stipulations Justified by Good Science and Substantial Evidence Should Be Imposed However

Reasonable stipulations based on sound scientific evidence are sufficient to ensure protection of the environmental resources in the planning area. Exploration and development will provide the energy source benefits that the area possesses. Exploration will not harm the environment when conducted within the stipulations and mitigation. However, BLM must apply only those stipulations based on and justified by substantial and sound science that have proven to work well in other North Slope oil fields. The stipulations imposed must be closely tied to their justifications and the amount of exploration and development conducted.

D. Expansion of Existing Special Areas and Creation of New Special Areas or Conservation Units, Including Wilderness and Wild and Scenic River Designations, Would Violate Congressional Intent

Because Alaska already contains more than 57 million acres of federal wilderness and Congress specifically set aside the NPR-A for oil and gas development, PLF opposes the set-

aside of special areas which prohibit or unreasonably restrict exploration. BLM proposes to include in the special areas much of the land having the highest potential for oil and gas resources. If BLM excludes these lands from development, the benefits that they possess as an energy source will remain untapped. However, BLM has no authority to expand existing special areas and create new special areas to the extent that such areas remain unavailable for exploration. The statutory intent of Congress precludes BLM from establishing such areas within Alaska without congressional approval. 001

In the Naval Petroleum Reserves Protection Act of 1976, Congress sought to minimize the impact of oil and gas exploration on sensitive environmental areas within the NPR-A. 42 U.S.C. § 6504(b). However, it did not seek to do so by eliminating such areas from exploration. Instead, Congress directed that exploration must be conducted in a manner that ensures the maximum protection of the areas. In doing so, Congress did not define maximum protection of the environment to include exclusion; rather, it defined exploration to include maximum protection of the environment. 002

Secondly, BLM must read Section 6503(b) in the context of the statute in which it is contained. Section 6503(b) does not allow the exclusion of exploration from areas within the NPR-A. Section 6503(b) authorizes the Secretary to "promulgate such rules and regulations as he deems necessary and appropriate for the protection of such values within the reserve." In managing the NPR-A as approved by Congress, the Secretary must remain mindful of the purpose for which Congress created the NPR-A; it exists as a petroleum reserve, not an environmental reserve. In keeping with that purpose, rules and regulations promulgated for the protection of environmental values must co-exist with exploration rather than prevent it.

Furthermore, in the Alaska National Interest Lands Conservation Act (ANILCA), Congress passed comprehensive legislation addressing the land use in Alaska. In drafting ANILCA, Congress sought to settle intense disputes among a variety of groups over the proper use and management of federal lands in Alaska. As part of the compromise, ANILCA specifically prohibits federal agencies from conducting additional studies of federal lands for the purpose of establishing conservation areas absent the express authorization of ANILCA or some "further Act of Congress." 16 U.S.C. § 3213(b).

Congress, in what have become known as the "no more" clauses of ANILCA, affirmatively stated that ANILCA was to be the last word on land management in Alaska:

> This Act provides sufficient protection for the national interest in the scenic, natural, cultural and environmental values on the public lands in Alaska, and at the same time provides adequate opportunity for satisfaction of the economic and social needs of the State of Alaska and its people; accordingly, the designation and disposition of the public lands in Alaska pursuant to this Act are found to represent a proper balance between the reservation of national conservation system units and those public lands necessary and appropriate for more intensive use and disposition, and thus Congress believes that the need for future legislation designating new conservation system units, new national conservation areas, or new national recreation areas, has been obviated thereby.

Section 101(d) of ANILCA, 16 U.S.C. § 3101(d). This section clearly recognizes that the status quo established in ANILCA is to be the last word in land protection for Alaska until Congress expressly decides otherwise.

In addition, in Section 1326(b), 16 U.S.C. § 3213(b), Congress directed:

> No further studies of Federal lands in the state of Alaska for the single purpose of considering the establishment of a conservation system unit, national recreation area, national conservation area, or for related or similar purposes shall be conducted unless authorized by this Act or further Act of Congress.

002

This language confines future studies of Alaskan rivers conducted for the purpose of including additional rivers into the wild and scenic river system to those studies already authorized by ANILCA or those later authorized by some "further Act of Congress."

Finally, BLM may not avoid ANILCA's restrictions by application of the Federal Land Policy Management Act (FLPMA), 43 U.S.C. § 1711, or the Wild and Scenic Rivers Act, 16 U.S.C. § 1276(d), which require BLM to conduct further studies for designating additional rivers on BLM lands as wild and scenic. ANILCA's restrictions on further wilderness studies prevail over these other statutes. Both FLPMA and the Wild and Scenic Rivers Act predate ANILCA and must be interpreted to conform to the later legislation. It is an established rule of statutory construction that later statutes take priority over earlier inconsistent statutes, *Tennessee Gas Pipeline Co. v. Federal Energy Regulatory Commission*, 626 F.2d 1020, 1022 (D.C. Cir. 1980).

CONCLUSION

The plain meaning of statutory language, especially when consistent with the clear intent of Congress, is binding upon administrative agencies. In selecting the alternative to be applied to the planning area, BLM must consider the intent of Congress to provide for environmentally responsible exploration and development. To be an ultimate success, the alternative selected must be consistent with congressional intent, based on sound principles of environmental protection, and compatible with sustaining the economic life-blood of the residents of Alaska.

002

Alternative E is the only alternative that adequately meets this definition because it opens the entire planning area to environmentally responsible exploration. 002

PLF appreciates the opportunity to comment on this matter of public importance.

DATED: March 12, 1998

Respectfully submitted,

ROBIN L. RIVETT

By _____
ROBIN L. RIVETT

Attorney for Pacific Legal Foundation

1667-001
The Secretary of the Interior was given the authority by Section 103(b) of the Naval Petroleum Reserves Production Act of 1976. Regulations governing management of the NPR-A were promulgated and set out a specific procedure for making additions or changes to administratively designated Special Areas (43 C.F.R. § 2361.1(c),(d)).

1667-002
Please see Response 1660-001.

Endangered Species Coalition

1101 Pennsylvania Street, NW, Suite 1400 • Washington, DC 20004 • (202) 682-9400 • (202) 682-1331 Fax

1668

March 12, 1998

Via Facsimile: Attention Jim Ducker

Mr. Gene Turland
NPRA Planning Team
Bureau of Land Management
222 West 7th Avenue
Anchorage, AK 99513-7599

NPRA Planning Team:

The Endangered Species Coalition, representing over 270 national and grassroots organizations, oppose oil leasing in the National Petroleum Reserve in Alaska at this time. While the coalition has already signed a letter detailing our general concerns about oil leasing in the reserve and the deficiencies of the Bureau of Land Management's Draft Environmental Impact Statement (DEIS), we are sending a seperate letter regarding our particular concerns about the impact oil leasing will have on the reserve's threatened and endangered species.

It is our collective belief that there are no compelling reasons to make incursions into the NPR-A at this time. The NPR-A consists of an area in excess of 23 million acres. The Northeast Quadrant of the NPR-A alone is 4.6 million acres large. This vast area is home to a multitude of plant and animal species and serves an important niche in the arctic ecosystem. The DEIS fails to adequately address impacts to endangered species in the northeastern NPR-A.

The DEIS would allow oil and gas exploration and development to proceed, while ignoring the obligations imposed on the Department of the Interior under the Endangered Species Act. The Department has not yet fulfilled its obligation under the Endangered Species Act to designate critical habitat for the spectacled eider or Steller's eider. Large portions of the planning area are used by both species and should be considered for designation as critical habitat. The agency cannot adequately determine if its obligations under the ESA to protect listed species are being met until this is completed. 001

Moreover, the DEIS analysis of potential impact to these species is seriously flawed. The DEIS concedes that "[t]he reaction of eiders to disturbance in the oilfields is not well understood." (DEIS, p. IV-C-36). See also DEIS, p. IC-C-37 ("As stated previously, reactions of eiders to aircraft are not well understood."). Nevertheless, and with no support, the DEIS concludes that disturbances "are not expected to cause significant population effects." (DEIS, p. IV-C-39). Given the incomplete information available on 002

potential impacts to these threatened birds from proposed activities, it would be unlawful to proceed at this time without insuring adequate protection by designating critical habitat and determining the impact of proposed activities on that habitat and the species. 002

At the present time, the Endangered Species Coalition believes that not enough time has been devoted to a comprehensive study of the species which inhabit the NPR-A. Therefore we feel that the Bureau of Land Management should not pursue any oil or gas lease sales within the planning area of the NPR-A at this time. Furthermore we feel that the Bureau of Land Management should consider the conservation alternative which has been forwarded by Northern Alaska Environmental Center and the Alaska Wilderness League. Important components of the conservation alternative include permanent protection of the Teshekpuk Lake and Colville River Special Areas.

Thank you for this opportunity to comment on the draft Environmental Impact Statement. Please include our comments in the official record.

Sincerely,

The Endangered Species Coalition

1668-001
Please see Response 1851-042.

1668-002
Please see Response 1851-043.

1669

Office of the Mayor

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March 12, 1998

The Honorable Bruce Babbitt
Secretary of the Interior
United States of America
Interior South Interior Building
1951 Constitution Avenue N.W.
Washington, D.C. 20242

SUBJECT: The North Slope Borough's Proposed NPR-A Alternative

Dear Secretary Babbitt:

Remembering the promise you made in 1997 that the Clinton Administration, "would not perpetuate 500 years of separating the people from the land," the North Slope Borough respectfully submits a proposed alternative for the National Petroleum Reserve-Alaska (NPR-A). The residents of the North Slope of Alaska are confident that we can accommodate both the Iñupiat culture/lifestyle and oil and gas industrial development. We have this confidence because of our experience with the oil industry in the Prudhoe Bay area and reliance on regulatory regimes such as our North Slope Borough Coastal Management Program to protect the land and its bounty for future generations of Iñupiat. We also believe our proposal contains the best information and innovative management techniques available to ensure the Iñupiat, the environment and the oil & gas industry coexist on the same land.

Background

The North Slope Borough (NSB), in cooperation with the city governments of Barrow, Nuiqsut, Atqasuk and Wainwright, held their own meetings on NPR-A and concluded none of the proposed development alternatives in the NPR-A Draft Environmental Impact Statement (DEIS) addressed the concerns of the NSB residents. The Borough staff then set about the task to draft an "NSB Alternative" for the NPR-A Northeast Planning Area. The NSB Alternative includes input from the Borough, affected villages, and nearby land owners (ASRC and Native allotment owners) and considers the values of highest importance to our residents ...subsistence use areas, wildlife habitat and cultural issues. This group is in agreement that petroleum exploration can be conducted with minimal impacts with proper stipulations in place. Petroleum development may be mitigated by stipulations; although in some parts of the Planning Area this may be more difficult to due to a complex array of important values.

General

NPR-A overlies what is considered by many to be the traditional homeland of the Iñupiat. The area receives the greatest subsistence use, in terms of human "use-days", of any region of the North Slope. The Reserve surrounds the four of the eight villages on the Slope (Barrow, Wainwright, Atqasuk and Nuiqsut) and is a large portion of the subsistence use area for Anaktuvuk Pass and Pt. Lay. Subsistence use is often based from cabin and camps. These cabins and camps are generally located where historic subsistence harvests have been the most fruitful. The greatest density of fixed cabins on the Slope occurs along the Chipp/Ikpikpuk River. Subsistence use in the immediate area surrounding Teshekpuk Lake is lower than other areas in NPR-A. Local hunters, however, recognize this area as a resource "bank" for wildlife (such as freshwater fish, caribou and geese) which is heavily used elsewhere for subsistence. In fact, seven NSB villages hunt the Teshekpuk Lake Caribou Herd (TLCH) making it currently the most important on the Slope from a subsistence standpoint (G. Carroll, pers. comm., 1997). Associated with subsistence use are the numerous traditional land use sites, cabins and tenting areas. The NSB feels strongly that these areas need to be identified and protected however the exact level of protection will vary from site to site.

In terms of wildlife, the NSB recognizes the great importance of the NPR-A region. During the late spring and early summer, in NPR-A, calving occurs for two caribou herds: the Western Arctic Herd, which is the largest herd on the slope, and the TLCH. The latter spends much of the time in NPR-A especially in the spring and summer. The region is used annually by TLCH herd for calving, feeding, insect relief and, not uncommonly for wintering (see *Caribou* section). Other significant wildlife values include: numerous deep water lakes which form important fish

much of the connected river-lake habitat on the Slope, polar bear denning areas, several of the largest rivers on the Slope, significant moose habitat and waterfowl nesting/molting areas. Of the nesting waterfowl, eiders are of key concern to the NSB. The Borough has been involved in research on all four species of Pacific eiders (King, Common, Stellar's and Spectacled eider) which nest and are taken in subsistence hunts along the Arctic coast. About 23% of the Pacific Black Brant molt in an area north and east of Teshekpuk Lake. These black brant are an important subsistence resource for the Yupik of the Yukon-Kuskokwim Delta.

The NSB gives the Teshekpuk Lake region special consideration because it is a biologically important area. The area NE of Teshekpuk Lake is used by geese (particularly black brant) for molting and some nesting. The lake basin may provide a regional over-wintering area for freshwater fish, however, this has not been verified and merits study.

Fish Creek is heavily used by the people of Nuiqsut and as such deserves special consideration to preserve the Iñupiat subsistence lifestyle for this community. Similarly, the Pik Dunes is a unique physical feature on the North Slope that provides insect relief for caribou and has some historic use of the site.

There are numerous sites that have traditional, historical or archaeological significance to the Iñupiat of the North Slope. These sites include the cabin and camps, old settlements, grave sites, sacred sites, places of folklore & legend, places where people have traditionally gone to gather berries and plant foods, traditional hunting and fishing sites, access routes and trails. While the

NSB is aware of many of these sites, it is possible and probable that many more remain unidentified.

Other concerns include protection of significant paleontological resources. The dinosaur and more recent Pleistocene mammal remains are of international scientific interest and may contribute greatly to the understanding of the Arctic's geologic past and to a current understanding of climate change.

The Bureau of Land Management needs to expeditiously pursue the conveyance of entitlement lands to the Alaska Native Claims Settlement Act (ANSCA) village of Nuiqsut. The NSB is also interested in seeing that past inequities are corrected with respect to a land exchange proposed by the Arctic Slope Regional Corporation. Successful resolution of both of these issues is in the best interests of the government and the Iñupiat people. 001 002

The NSB supports adding provisions to the lease sale that would encourage employment and job training opportunities for NSB residents in oil and gas exploration in NPR-A. Employment for NSB residents has been very low to non-existent for other developed oil fields. The NSB believes encouraging lease holders contracting with the village and regional corporations will provide additional job opportunities for NSB residents. 003

The NSB Alternative

Introduction 004

The North Slope Borough supports leasing of the NPRA Planning area. Prior to any exploration or development, however, the Borough wishes to institute a process which will mitigate potentially harmful effects. This process has been the most effective conduit for the Borough in setting the terms for industry activity within and adjacent to its municipal boundaries. The process makes full use of the North Slope Borough Comprehensive Plan, the Borough ordinances related to broad Permitting and Zoning powers, and local methods of consultation and comment, such as the Conflict Avoidance Agreement the Oil Industry and the Alaska Eskimo Whaling Commission (AEWC) developed for offshore exploration and development. The Conflict Avoidance Agreement has been a successful vehicle for consultation between industry, government, and the Iñupiat.

The Borough conditions its support of leasing with the adoption of stipulations that are deemed to be in the best interest of the Borough residents. Some of these stipulations are identified in the DEIS. Others regarding areas of highest concern are defined below. Above all, the Borough seeks formal adoption of an enhanced consultation process.

Consultation & Consensus

The NSB proposes to engage in an active dialogue with the oil & gas industry where we will agree on exploration and development proposals on a case by case basis, maximizing community involvement. This process we call the Consultation and Consensus. The NSB has identified specific subsistence, wildlife habitat and traditional/cultural land use areas of highest concern to Borough residents within the Northeast Planning area. These areas may not include all sites so we propose that, rather than rely upon a given list of sites and areas, the consultation process be

used for all areas, with particular emphasis on the NSB identified sites. The end result of this process may be NSB and Bureau of Land Management (BLM) permits for either exploration or development with stipulations to mitigate foreseen impacts; a meeting after the permit work is completed to assess the relative success of the stipulations; and an active scientific research and monitoring program to follow up on lingering issues. 004

The Borough envisions a two part process where the lease holders would convene a meeting between the Borough, the Authorized Officer (AO) of BLM, appropriate State of Alaska representatives and tribal and/or city officials of the village most affected, and other nearby private land owners to discuss the impacts of their activity on subsistence users, wildlife habitat, or traditional land use sites in the area. Funding for this process should be provided by BLM as a part of their management of NPR-A. This process is modeled after the Conflict Avoidance Agreement the Oil Industry and the Alaska Eskimo Whaling Commission enter into every open water season to mitigate the impacts the industry's activity may have on the subsistence harvest of Bowhead whales. This agreement has been successful in resolving conflicts between subsistence hunters and the oil industry, allowing both to conduct activities in the same area.

Exploration Consultation

Consultation would begin prior to the onset of exploration of the lease area. All concerned parties would gather to discuss the impacts of exploration and efforts to mitigate, by stipulation, those impacts. Consensus of the group must be reached to implement the exploration plans of the lease holder. Consultation at the exploration phase will help the Borough to identify the critical nature of the impacts to the area and whether further restrictions will be needed to develop the property with surface occupying structures or if the site should only be accessed via directional drilling or other innovative subsurface technologies. Another meeting shall be held after the exploration activity is complete to discuss the execution of the program based on the terms and conditions imposed and the level of success experienced. The Borough believes it is important to evaluate the effectiveness of mitigation efforts to continuously improve the process of consultation.

Development Consultation

The second part of the process is consultation related to development of the lease area. Here, the parties gathered will discuss the effects of exploration and to discuss issues related to development of the area. The process will define the conditions under which surface or subsurface occupancy of the land may be allowed and mitigated by stipulations. An important feature of both consultative processes is the requirement to agree, by consensus, on the plan of operations. Another meeting shall be held after the development is complete to assess the relative success of the program based on the terms and conditions imposed.

Expanded Consultation for the Black Brant Molting Area

The consultation group would be expanded to include a representative from the Alaska Village Council President's Waterfowl Conservation Committee, working through the State of Alaska representative, when exploration or development is proposed for those areas north and east of Teshekpuk Lake, identified in the DEIS as the black brant molting area.

Guiding Principles for Consultation and Consensus

The NSB recommends the Secretary of Interior adopt the NSB Coastal Management Program as the base document for guiding decisions during the Consultation and Consensus process. NSB

residents have welcomed the oil industry into their traditional homelands partly because they felt comfortable with governing rules such as the NSB Coastal Management Program and its strong emphasis on protection of the Iñupiat culture and lifestyle.

Appeal Process
If consensus can not be reached by the Borough, the State of Alaska, the affected village, nearby landowners and the lease holder, then the decision to authorize operations shall be sent to an impartial hearing officer appointed by the Secretary of the Interior or his designee. The hearing officer shall decide the matter for the parties, based on the policies of the North Slope Borough Coastal Management Plan. The decision of the hearing officer may be appealed through the federal courts.

Research and Monitoring
The NSB supports on-going and extensive research and monitoring of areas where industrial activities may have an impact on wildlife, fish, waterfowl, subsistence use, vegetation, air or water quality, and hydrology. We also believe this program can be used to address the effectiveness of mitigation efforts, cumulative and secondary impacts. We believe such a program should be issue-based with a clearly identified set of goals to be achieved. The review should be independent and the reports produced undergo a peer review. Groups to be contacted for involvement may include the Subsistence Advisory Panel and the NSB Science Advisory Committee. Such a program should be funded, in full, by the Bureau of Land Management.

Final Authority
The Secretary of the Interior, by approving this process and through the appointment of the hearing officer, will retain final decision making authority based on retention of the Iñupiat subsistence lifestyle as the highest and most important ranking land use value in the area.

Areas For Consultation & Consensus

Definition of Terms
Surface Facilities - (SF) means gravel pads and roads, well houses, compressors, pumps, processing facilities.

Seasonal Restrictions on Exploration and/or Development - (SR) means a seasonal or time limitation on activities to allow important animals activities (such as goose molting) to take place without human disturbances.

Authorized Officer - (AO) means the administrative officer representing the Bureau of Land Management.

Transportation Facilities - (TF) means pipelines, ice roads, and utility lines.

Exploration - means seismic surveys and other surveys taken by mechanical means, exploration and delineation wells.

Development - means construction, reconstruction, relocation, placement or alteration of a structure; disturbance of the surface of the ground (including submerged ground). Disturbance includes dredge or fill activities; creation of an equipment or material storage site, or tailings

004

pile; creation of a refuse pile, dump or landfill; creation of a reservoir, settling or evaporation pond, reserve pit or leach field or placer mining; activities directly related to oil, gas, coal, gravel, topsoil, fill, metal ore, mineral, vegetation or other resource extraction; and tundra travel.

Tundra Travel - means the off-road operation of vehicles except snow machines weighing less than 600 pounds.

Subsistence/Cultural Values/ TLUI
The NSB considers conflicts with subsistence activities to be among the most significant issues regarding the development of NPR-A. The comments Nuiqsut residents set forth in Appendix F page 4 clearly indicate some consistent subsistence related concerns. These are: restriction of access to traditional hunting areas, cumulative impacts from multiple fields, restrictions on firearm use, and wildlife harassment. Nuiqsut residents felt that a Subsistence Advisory Panel was the best tool to insure communication between Nuiqsut, BLM, NSB and petroleum industry, to stay abreast of development, and to reduce or mitigate conflicts.

Participants at the Subsistence Workshop (Appendix F) concluded that the village of Nuiqsut will be most directly affected by NPR-A development, however residents of Barrow and Atqasuk also use the NPR-A NE Planning area extensively and may be affected as well. The August 1997 Subsistence Workshop (Appendix F) also stressed the need for ongoing research and monitoring of subsistence activities. The stipulations 61-65 (Section II, DEIS) capture many of the important aspects from the Subsistence workshop.

The NSB currently does not support the "Subsistence Compensation" section in Appendix F page 14; however, this is under further consideration.

Traditional Land Use Inventory (TLUI), AHRS, Ed Hall sites should be protected on a case by case basis. Regulations in NAGRA, NHPA, and ARPA need to be adhered to during leasing considerations. Cabins are situated in areas of high subsistence and high wildlife use areas. The NSB recommends an amendment to Stip 49 to increase the NSF zone from 1 to a 2.5 miles radius around "known long-term cabin or long-term campsites." Note that the NSB feels long term campsites should receive equal consideration. 005

The use of firearms within lease areas is an important issue. The NSB concurs with stipulation 62a, which states "the lessee shall establish a procedure for entrance to facilities, the use of roads, and firearms discharge."

The NSB proposes a new stipulation (NSB-4, Table 4) which provides a 3 mile NSF area on either side of very high intensity subsistence use rivers/creeks such as the Nigliq Channel of the Colville and Fish Creek. We propose a 2 mile Consultation area for moderate subsistence-use drainage's such as the Kealok River and Judy Creek. Since many fixed cabins occur on the Ikpikpuk River, it was felt that it was not necessary to attach stipulation NSB-4 to this drainage at this time.

Stipulations:
- Fish Creek and Judy Creek are currently among the most important subsistence areas used by Nuiqsut residents (Brower and Opie, 1997). The NSB recommends a 3 mile NSF area on Fish Creek and a 2 mile Consultation area for Judy Creek.

- The entire surface area of Teshekpuk Lake should be designed NSF (as set forth in the wildlife section). 005
- The area south of Teshekpuk Lake into the foothills and west to the Itkillikpuk River used for fur hunting/trapping by Nuiqsut and Barrow residents. This use should be recognized during both petroleum exploration and production as per Stipulation 63 and 64. All reasonable efforts should be made to avoid conflicts with these uses.
- Miguakiak River; add a 3 mile consultation area from the center of the river channel to protect high use subsistence activities (Stip NSB-4).
- Nahuknuk Lake- high value for subsistence fishing and fisheries habitat; consultation area 0.5 mile around the perimeter of the lake.
- Stipulations 61-64; Monitoring affects of development on subsistence, unrestricted access, conflict avoidance, consultation and communications with subsistence users. The NSB agrees with all provisions set forth in these stipulations.
- Stipulation 78; Public access restricted from goose molting areas except by subsistence users.
- Stipulation 49; increase NSF zone from 1 to 2.5 mile radius around all long-term cabins and campsites.

Wildlife

Geese molting areas

The current population of geese which molt in the region NE of Teshekpuk Lake ranges from 19,000 to 68,000 birds with a mean of 38,000 (of which brant compose about 46%). This is an "international population" composed of birds from, US (Alaska), Siberia, and Canada, most of whom winter in Mexico. It is estimated that up to 23% of the world population of Pacific brant may molt in this area in any given year. Over several years, however, we understand visitation could constitute *nearly the entire* world population. Biologists are not certain why geese choose this area, but suggest it is primarily to escape disturbance since studies show nutritional reasons alone can not explain the use pattern (Proceedings of Caribou/Waterfowl Workshop, 1997). Eight lakes in this area provide 50% of the geese (all species) molting habitat. Studies in the Prudhoe Bay area indicate that humans on foot and helicopters cause the largest behavioral reactions disturbance from molting geese. Excessive disturbance may push the birds into an energy imbalance and/or cause abandonment of the area. Molting (and regrowing) flight feathers places large energy demands on these birds which is another reason they are susceptible to disturbance. Precisely what constitutes a reasonable setback needs further research. Also visual barriers or "fences" should be further investigated as a mitigation measure. On the other hand, most of the brant are born or failed breeders so disturbance would not directly affect nesting success in a given year.

Applicable Stipulations/Permit Terms 006

- Stipulation 25; provide a 0.25 mile NSF area around moderate use lakes and a 0.75 mile area around known high-use goose-molting lakes.
- Stipulation 29: use maximum feasible extended reach drilling and/or other innovative technology in goose molting areas.
- Stipulation 1; all feasible precautions should be taken to avoid attracting wildlife to food or garbage. Site landfills out of molting areas area where they will attract predators. [The NSB *strongly supports* this stipulation. Attracting predators could affect caribou calf survival as well.]
- Stipulations: 33, 34, 50. Construction activities should observe seasonal restrictions and generally reduce disturbance as much as is feasible.

- Stipulation 78: Prohibit public access except subsistence users. The intent is to reduce human disturbance and hunting pressure, however, subsistence hunters should continue to restrict the harvest of molting birds. Traditional Knowledge regarding past hunting practices and wildlife use (waterfowl and caribou) patterns in this area would provide useful information for managing molting birds. 006

Other Bird species

As mentioned earlier, all four pacific eiders appear to be in decline (Suydam et al., 1997). Since, king and common eiders are known to nest in the area, efforts should be made to identify nests and avoid disturbing them. It is our hope that sophisticated habitat analysis will assist planners and permitting staff in flagging and protecting areas where these species occur.

Federal protection of Peregrine falcon nests along the Colville (Stipulation 45) are considered adequate.

Caribou

Participants of the 1997 Caribou/Waterfowl workshop noted the importance of the Teshekpuk Lake region for caribou calving. Attributes associated with good calving habitat include: low predator density, micro-relief or ground roughness, good forage, low disturbance, and traditional use. Similar habitat is available elsewhere thus exactly why caribou choose this area is not well understood. Caribou use the area in all seasons however calving and summer insect relief are considered the most important and frequent (predictable) uses. During the period 1991 to 1996, the TLCH animals wintered in the NE Planning Area about 19% of this period and were present in the area during the calving period and summer (June-Aug) 72.5% of the time (data are based on 23.9 caribou-years tracking data; NSB/ADF&G unpublished data). ADF&G surveys indicate that an average of 73% of the female collared caribou were within the Teshekpuk Lake area between 1 and 15 June (G. Carroll, pers comm, 1998).

A very narrow corridor has been shown to form the key access to the area north of the lake (Philo et al., 1993). If an irreversible deterrence (form exploration, development, excessive recreational activity) prevents the majority of the herd from reaching the northern region (north of Teshekpuk Lake) of the NE NPRA, the impact could be significant (at the population level) as access to foraging areas and insect relief is critical. If this corridor was somehow 'blocked' or animals were deflected, the NSB would consider this an unacceptable impact. Participants at the Workshop concurred that post parturient female caribou do *not* react strongly to roads, gravel pads and structures per se but do show behavioral responses to ground traffic and aircraft. Nevertheless, it is particularly important that disturbance be kept to a minimum in this zone, thus the NSB concurs with Stipulation 28d which precludes structures in this corridor.

Use of the Teshekpuk Lake region for calving by TLCH animals is fairly consistent but does vary depending factors which are largely unknown . Very few instrumented females from the TLH have been documented to calve outside the Teshekpuk Lake area with the exception of one (NSB satellite collared) cow which now calves with the Western Arctic Herd in the Utukok River highlands. Females that are not pregnant may have lower fidelity to the area.

Appropriate protection the TLCH calving area is of great concern to the Borough. The scientific literature indicates that post-parturient caribou in particular are sensitive to any disturbance be it industrial or natural (i.e., predators). Based on a synthesis of the literature, our preliminary

determination is to defer the caribou calving area from leasing. The NSB concurs with the caribou/waterfowl workshop suggested stipulations to reduce disturbance to pre and post parturient cows.

Stipulations

- Stipulation 50: Ground transportation guidelines and seasonal traffic restrictions. The NSB concurs with this stipulation should leases be developed within the Teshekpuk Lake Caribou area.
- Stipulation 24; 3 year prior study on leases within TLCH calving area.
- Stipulation 26; insect relief areas, limited surface occupancy in coastal area; siting of facilities in consultation with AO, State and NSB.
- Stipulations 53-58; Guidelines for aircraft use; seasonal restrictions, flight minimums.
- Stipulation 28; Criteria for narrow land corridors between Teshekpuk Lake and Beaufort Sea; all aspects of this stipulation should be implemented as to not impede caribou from moving into and using the traditional calving grounds. NSB recommends NSF & NTF for these areas.
- Stipulation 31. Orient oilfield layout appropriately with known caribou movement corridors. Traditional caribou movement corridors around the periphery of Teshekpuk Lake (and perhaps other areas) need to be identified and documented.

007

Fish Resources

The connected lake-river habitat in NPR-A, Teshekpuk Lake, Ikpikpuk River, and other water bodies form unique and important fish habitat. Broad whitefish (*Coregonus nasus*) are a key subsistence fish species which have rather limited spawning habitat on the North Slope but use an extensive complex of seasonal lake/river/stream habitat to feed and over-winter. The lake-river complex is more extensive in NPR-A than elsewhere on the Slope. Fish access and use of many lakes is seasonal since connections may occur only be present at breakup. These factors make this habitat vulnerable to disruption should these small connecting streams (or in some cases flooded tundra) become blocked by road or gravel pad construction. The Chipp-Ikpikpuk river system and the Colville River currently form the most concentrated spawning habitat for broad whitefish in the NE Planning area and very likely the entire North Slope (NSB DWM unpublished data; L. Moulton, pers. comm., 1997; Bendock and Burr, 1984). The deep lake complex south of Teshekpuk Lake is unique and provide a significant portion of NPR-A's lake trout habitat as well as other species.

Teshekpuk Lake is a unique water body which supports the largest diversity of fish species of any (known) lake within the Reserve (Philo et al, 1993). Fish concentrate in limited over-wintering areas and are obviously vulnerable at these times. However, fish can *be effectively protected by using established precautionary measures (such as stipulation 16, 42,44)*. Research and experience has demonstrated that development impacts can be easily and almost completely mitigated. The practices known to cause adverse impacts should be avoided; these include: excessive de-watering fish over-wintering areas, setting seismic charges within waterbodies, and stream blockage through improper bridge and culvert design. The seismic survey application Vibroseis affect on over-wintering fish is not fully understood and will require further review.

Therefore, if proper measures are taken, the NSB does not believe that impacts to fish will be a significant issue in NPRA leasing and development.

Teshekpuk Lake no surface facilities should be allowed unless it can be shown that oil can be safely extracted from the lake basin. The NSB has the same concerns with development within the lake basin as it has with offshore development. Recovering spilled oil in a large water body during breakup or freeze up has not been effectively demonstrated.

Stipulations/Permit Terms

- Stipulation 39: Placement of oil and gas facilities areas and restrictions. We agree to all provisions of this stipulation with the exception that larger "subsistence" area may be required for Fish Creek, Judy Creek, Ikpikpuk River, Miguakiak River and Kealok River (added). Nuluakruk Lake should be included since is constitutes significant fish habitat for broad whitefish [and possibly Arctic Cisco].
- Stipulation 16; NSB concurs with all provisions of this stipulation.
- Teshekpuk Lake - NSF within the lake basin.
- Stipulation 39; 0.5 mile Consultation area around Teshekpuk Lake.
- Stipulation 40: Criteria for gravel mine sites. NSB concurs with all provisions of this stipulation.
- Stipulation 16, 41; Ikpikpuk River has critical broad whitefish spawning and over-wintering habitat; water should not be drawn from known over-wintering and spawning sites (*kaglu*).
- Stipulations 41, 42, 43, 44; Siting of facilities, bridge design over rivers, drainage pattern maintenance, de-watering. NSB concurs with all provisions within these stipulations.

008

Grizzly Bears

The NSB recognizes the great importance of strict bear interaction procedures. Of particular importance is that precautions be taken not to attract bears to food sources. We know from experiences at Barrow and Deadhorse that food sources at landfills can lead to serious bear nuisance problems that are very difficult to remedy. Therefore, the we suggest that stipulations 1 and 81 be implemented.

The following is a description of areas which are of special interest to the NSB. Draft guidelines for the suggested use by area and the applicable stipulations from DEIS Section II.7 are listed by category; these are: wildlife (geese, caribou, fish); subsistence /TLUI/cultural values; and other. Many of these stipulations were taken from existing NSB, State, and Federal permit and mitigation terms.

No Surface Facilities Areas

Teshekpuk Lake and the Black Brant Molting area

The North Slope believes no surface facilities should be sited on Teshekpuk Lake and those areas north and east of Teshekpuk Lake where the black brant come to molt (see *Stipulation 25*). Teshekpuk Lake is a important lake on the North Slope for subsistence harvests of fish and game as well as for its wildlife and fish habitat. The area northeast of Teshekpuk Lake is an important molting black brant, other geese and some eiders. The black brant are also a important subsistence species for the Yupik of the Yukon-Kuskokwim Delta.

Fish Creek

The Borough also opposes the placement of surface and transportation facilities within three miles of the centerline of Fish Creek in the Nuiqsut area due to its high value for subsistence harvests by the people of Nuiqsut.

009

Caribou Corridor
There are two discreet areas around Teshekpuk Lake that are important for successful caribou passage into areas where the TLCH has historically calved and seek relief from insect infestations. The Borough believes surface facilities should not be located within these areas to ensure the TLCH remains a healthy and growing herd. These two areas are generally located in the area of T16N, R8W, Umiat Meridian (for the western corridor) and the area of T15N, R4W; T14N, R4W; T15N, R3W; T14N, R3W, Umiat Meridian (for the eastern corridor). 010

Paleontology
The NSB recognizes the presence and importance of significant paleontological resources within NPR-A. The Late Cretaceous dinosaur fossil beds along the Colville River are considered "world-class" finds by paleontologists. The NSB is in support of scientific and preservation efforts with regard to these finds. The NSB recommends that paleontological sites be considered on a case by case basis. This approach together with provisions in Stipulation 79 should be sufficient to mitigate impacts.

The Pik Dunes
The Pik Dunes are an ecologically unique feature on the North Slope. The NSB recognizes the unique biological, cultural, and scenic qualities of this feature and opposes the placement of surface facilities within this relatively small area.

Other Issues

Resolution of Pending Native Allotments in NPR-A 011
The Borough supports the resolution of native allotment applications in NPR-A that have been pending for over 25 years. We encourage BLM to expedite the conveyance of these allotments.

Support for Resolution of the Nuiqsut Village Entitlement 012
The NSB supports resolution and conveyance of lands still owed to the Nuiqsut village corporation, Kuukpik. There are lands surrounding the village that Kuukpik has selected and should be conveyed to the corporation before a leasing program commences on these lands.

Support for ASRC Land Exchange 013
The North Slope Borough supports ASRC's proposal to exchange lands they hold along the Killik River for lands that are within NPR-A. We believe this a fair and equitable solution to the Federal exclusion of ASRC from selecting lands traditionally used by the Iñupiat in the ANCSA. We also believe that a local land owner/manager will be more responsive to the needs of local residents and their government.

Economic/Employment Opportunities for NSB Residents 014
Any leasing program authorized for NPR-A should contain provisions to encourage the oil & gas industry to hire Borough residents as well as business opportunities for the village and regional corporation on the North Slope. Historically, employment of Borough residents at the oil fields of the North Slope has been extremely low and in the case of some oil fields non-existent. We also believe it is important to encourage the oil & gas industry to explore contracting opportunities with North Slope village and regional corporations, further creating employment opportunities for Borough residents.

Joint Management Plan for the Colville River 015
The NSB supports the creation of a management plan for the Colville River that would protect subsistence, recreation, scenic, wilderness, moose, fish, waterfowl, raptor and passerine values identifies along the river. The Colville River is an important source of subsistence resources (such as moose, fish and waterfowl) and well as a major transportation corridor for the Iñupiat. The NSB does not support the designation of the Colville as a Wild and/or Scenic River. Other preservation designations in the form of parks, refuges and preserves have resulted in the curtailment and criminalization of subsistence activities in areas formerly enjoyed by Borough residents living in Anaktuvuk Pass and Kaktovik. We support a process that allows the Federal, State and Borough governments to tailor a management plan that integrates the Iñupiat lifestyle with sound ecological practices.

Environmental Remediation of Hazardous Materials Sites within and adjacent to the Northeastern Planning Area 016
The NSB supports the immediate and complete environmental remediation of hazardous materials left at sites like Umiat. These toxic landfills, buried by agents of the Department of Defense, were supposed to freeze back via permafrost, yet in the case of Umiat have not performed as intended. Erosion from the Colville River has exposed this toxic landfill, spilling hazardous materials into the Colville. The Borough is concerned that hazardous materials exposed to the active environment will eventually result in the contamination of Iñupiat subsistence resources. This is a critical matter that requires the prompt attention of the Bureau of Land Management.

NPR-A Area Wide Issues

Impact Funds 017
For over twenty years the residents of the North Slope have borne the brunt and bulk of oil and gas exploration in Federal Waters without realistic compensation for its impacts, even though the State of Alaska receives impact funds from the federal government for this activity. There is a federal law that allows North Slope communities to directly draw on the proceeds of lease sales held in NPR-A as impact funds. The NSB is concerned the State of Alaska will not be able to execute the legislative acts necessary to appropriate these funds. The NSB wants assurances from the federal government that these funds will be appropriated when they are requested by qualifying North Slope communities.

Alternative Energy Sources for Villages in NPR-A 018
The communities of Atqasuk, Nuiqsut, Wainwright and Barrow are surrounded by NPR-A yet pay some of the highest prices for electricity and fuel. The use of diesel fuel for heating and electrical generation is costly, and poses an ever present environmental liability, and affects the quality of life for village residents. It seems absurd that a region used for exploration and development of oil and gas must rely on imported diesel fuel for its own energy needs. The North Slope Borough believes that we should be able to access some of these sources for power generation and fuel as part of the mitigation effort for a leasing program in NPR-A to bring energy alternatives to the North Slope Borough villages. Work is already underway, for example, to bring locally-produced natural gas to Nuiqsut; thanks to the efforts of the Borough, oil industry and the Nuiqsut village corporation. In addition naturally occurring gas seeps, conventional gas and coal bed methane exploration targets near Atqasuk and Wainwright

indicate the potential for these villages to avoid the costs and environmental risks of annual diesel fuel tranport, storage, and distribution in their communities. Additional exploration, in the form of research test wells, and energy conversion programs are needed to prove up more prospects of locally produced natural gas and demonstrate their suitability as a village energy source.

The North Slope Borough has given the issue of oil & gas leasing in NPR-A much thought and has been the catalyst for innovation and refinement of our best management practices. Oil & gas exploration and development is an issue we know well and believe our "wise use" proposal strikes the best balance between the Iñupiat lifestyle, the environment and development. The Borough residents and I look forward to your response.

Sincerely,

Benjamin P. Nagcak
Mayor

Attachments

cc: Pat Shea, Bureau of Land Management, Washington, D.C.
Tom Allen, Bureau of Land Management, Alaska State Office
Deborah Williams, Department of Interior, Alaska State Office
Governor Tony Knowles, State of Alaska
Commissioner Frank Rue, State of Alaska, Department of Fish & Game
Commissioner John Shively, State of Alaska, Department of Natural Resources
Marie Carroll, Chief Administrative Officer, NSB
Charles D.M. Brower, Director, Wildlife Management, NSB
Karen Bunnell, Director, Planning & Community Services, NSB
Richard Glenn, Director, Energy Management, NSB
Taqulik Hepa, Deputy Director, Wildlife Management, NSB
Jon Dunham, Deputy Director, Planning & Community Services, NSB
Jana Harcharek, Liaison Officer, Iñupiat History, Language & Culture Commission, Planning & Community Services, NSB
Craig George, Wildlife Biologist, Wildlife Management, NSB
Dan Bevington, GIS Analyst, Planning & Community Services, NSB
Harry Brower, Jr., Subsistence Resource Specialist, Wildlife Management, NSB
Becky Gay, Government Affairs Administrator, NSB
Tom Lohman, Environmental Resource Specialist, Wildlife Management, NSB
Dr. Todd O'Hara, Research Biologist, Wildlife Management, NSB
Dorothy Hopson, Mayor, City of Anaktuvuk Pass
Herman Kignak, Mayor, City of Atqasuk
Jim Vorderstrasse, Mayor, City of Barrow
Leonard Lampe, Mayor, City of Nuiqsut
Lydia Agnasagga, Mayor, City of Wainwright

Table 1. Land use categories associated with various wildlife values, land and water features and subsistence-use areas in the NSB Alternative.

Land Use Categories
1. NSB Surface Facilities
2. SF - Surface Facilities
3. TF - Surface Transportation Facilities
4. NF - Non-Surface Facilities
5. SR - Seasonal Restrictions on Exploration and/or Development
6. CSTA - Consultation Area

Land Use Values
1. W - Wildlife (general)
2. S - Subsistence
3. C - Caribou
4. SP - Spectacled eider
5. P - Paleontological
6. RA - Areas requiring research
7. C - Culturally significant

Listed populations or unchanged from DPIS unless specifically noted. Feature	Value	Land Use Category	Size	Comments - Purpose
Cabins and campsites, known long-term	S	NSF	2.5 mile radius buffer	Slip 89 (amended), increase from 1 to 2.5 mile radius (approx. 19.6 mi² or 12,560 acres) around long term cabins and camps. Purpose is to allow subsistence activities to occur with minimal disturbance.
Caribou coastal insect relief habitat	W	CSTA	2 mile coastal band	Slip 90, 2 mile coastal band from Kogru River west to Sakoonang River east of 152-30' - 152-45' longitude in consultation with NSB, State, BLM, AO.
Colville River (main channel). South of Nuiqsut	S, W	NSF	0.5 miles (2640 feet)	Slip 96, 0.5 mile zone from west bank protection of fish habitat and subsistence use areas. Consultation with NSB, State, BLM, AO.
Colville River Aspen, Passerine, Moose LUEA	W	CSTA	1 mile west of Colville R	Slips 45, 206, moose, raptors, Colville River Bird Conservation Area as per ASRC agreement; subsistence moose hunting area. (No mandated buffer, specific to ASRC lands)
Colville River/Ooliqq Channel high subsistence use area	S	NSF	3 miles (5280 feet)	NSB suggests 3 mile setback to be consistent with other high use subsistence areas. Slips 84, 88, 89, 95, 97, 98, 99, 100.
Colville River/Ooliqq Channel Cultural Site	CS	CSTA	same as area	LEGEND, BLM, ASRC, State of Alaska identified cultural sites. Surface occupancy, exploration/development will be determined in consultation and adherence to NAGPRA, NHPA, and AHPA.

Fish Creek - moderate subsistence use area	S	NSF	2miles (both sides)	NSB Stip-4; Moderate use subsistence area; from T11N, R1E, SEC 32 to T9N, R3W, SEC 20, Umiat Meridian.
Fish Creek -high use subsistence area	S	NSF	3 miles (both sides)	NSB Stip-4; Popular spring, summer, autumn camping/high-use subsistence area from T12N, R3E, SEC 27 to T11N, R1E, SEC 32, Umiat Meridian.
Geese molting lakes- high use	WF	NSF, SR	0.75 miles	Stip 25; Purpose is to reduce disturbance around high use goose molting lakes
Geese molting lakes- moderate use	WF	NSF, SR	0.25 miles	Stip 25; Purpose is to reduce disturbance around moderate use goose molting lakes
General Paleontological resources	P	CSTA	case by case	Stip 79; No structures constructed on paleontological sites; purpose is to protect significant dinosaur and Pleistocene remains
Ikpikpuk River fish/watershed	W	CSTA	0.5 miles	Stip 39; Includes critical broad whitefish spawning and over-wintering areas.
Ikpikpuk River paleontological sites	P	CSTA	case by case	Stip 47; Limited surface occupancy within 1 mile of the Ikpikpuk River, to protect Pleistocene remains. [Note: Stip 39a may be sufficient to protect the Ikpikpuk Paleontological LUEA].
Judy Creek (Tingmiaqsvik) - moderate use subsistence area	S	CSTA	2 miles (both sides)	Stip NSB-4; Popular spring, summer, autumn camping/high-use subsistence area. Follows river and extends south to headwaters.
Kealok river (SW of Teshekpuk), fish/watershed protection	W	CSTA	0.25 mile	Stip 39; (amended), fish bearing river add to Stip 39
Kealok river (SW of Teshekpuk), moderate use subsistence area	S	CSTA	2 miles (both sides)	Stip NSB-4; Spring goose hunting, moderate use subsistence use area; extends from Teshekpuk Lake margin 5 miles inland.
Kikiakrorak River; moderate subsistence use area	S, W	CSTA	2 miles (both sides)	Stip NSB-4, 49, 45; subsistence protection, extends to headwaters. Overlaps with Colville Raptor, Passerine, Moose LUEA
Kogosukruk River, moderate subsistence use area	S, W	CSTA	2 miles (both sides)	Stip NSB-5, 49, 45; subsistence protection, extends to headwaters. Overlaps with Colville Raptor, Passerine, Moose LUEA
Miguakiak River - high use subsistence area	S	CSTA	3 miles (both sides)	NSB Stip-4; high use subsistence game along river. Purpose is to reduce disturbance of high intensity subsistence use areas.
Nuiuakruak Lake	W	NSF	0.5	Stip 39 (addendum); Important fish habitat, high subsistence use
Pik Dunes	W, CA	NSF, SR	0 miles	Stip 46; no surface structures on dunes; caribou insect relief area, cultural sites.
Steller's Eiders/Spectacled Eiders	W	CSTA	case by case	Threatened/ Endangered species
Teshekpuk Lake Basin	W,S	NSF, SR		Stip NSB-3; Defer from leasing.
Teshekpuk Lake calving area	W	SR	case by case	Stip 24; Protection of known historic caribou calving area; study required. NSB concurs with this stipulation.
Teshekpuk Lake caribou movement corridors	W	NSF, NTF,	see Stip 28d	Stip 28d: No permanent surface facilities may be sited within a zone extending 4 miles eastward from the eastern shore of Teshekpuk Lake in the area between lake and Kogru lake.
Teshekpuk Lake coastal buffer	W,S	CSTA	0.5	Stip 39b; Add a 0.5 mile buffer around lake edge [considered at 27 Jan meeting]
Trapping Area for furbearers; S and SW of Teshekpuk Lake	S	CSTA	N/A	Stips 63 and 64; Use stip provisions to mitigate effects of petroleum exploration and development in the furbearer trapping region.
Unspecified fish bearing streams, rivers.	W	CSTA	500 ft	Stip 41; fish habitat LUEA

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Philo, L.M., J.C. George and L.L. Moulton. 1993a. The occurrence and description of anadromous and freshwater fish in Teshekpuk Lake, Alaska 1990-1992. Unpublished report. Department of Wildlife Management, North Slope Borough, Barrow, Alaska.

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March 12, 1998

The Honorable Bruce Babbitt
Secretary of the Interior
United States of America
Interior South Interior Building
1951 Constitution Avenue N.W.
Washington, D.C. 20242

RE: Comments on the NPR-A DEIS/IAP

Dear Secretary Babbitt:

The North Slope Borough appreciates the opportunity to comment on the NPR-A Draft Environmental Impact Statement/Integrated Activity Plan. I want you to know that the BLM and MMS staff did an admirable job assembling this document but because an artificial deadline was imposed for its preparation it is incomplete and lacking the depth that an EIS should have to discuss fully the ramifications of a given action or alternative. In some cases there was simply not enough time for your staff to fully comprehend the implications of this action. In light of the fact this EIS is incomplete, the North Slope Borough offers the following comments from our participating departments.

- Department of Energy Management

pg. III-A-5 A review of seismic exploration in the planning area would be useful here. Navy (1944-53), Husky (1974-1982), and industry exploration grids cover the area. Where it is not confidential, these grids, or their outer boundaries can be shown to indicate the areas of active exploration. 021

pg. III-A-31 The paragraph preceding the Physiography section is the most important paragraph of the section. This should be repeated somewhere in the executive summary section, to indicate the importance of the Alpine discovery in the renewed interest in the area. 022

pg. III-A-38 section (b) Are all Navy exploration sites currently in need of completion? or some but not all. 023

pg. III-A-38 section (d) The Walakpa (Usliapaa) field is developed, and now produces more that 90% of Barrow's annual consumption. 024

pg. III-A-42 section (2) What about the Umiat site? Refer to the Corps of Engineers newsletters for site description. Why does the DEIS ignore the Umiat site? 025

pg. III-A-46 Section (5) The Colville River itself contain gas and oil seeps. A gas seep near Brady, and oil seep near Umiat were identified during the Navy exploration period (1944-1953). 026

pg. III-A-53 The DEIS should reference the complaints of Nuiqsut regarding the smog from the Prudhoe Kuparuk area. The yellow layer is pronounced, and not due to Arctic haze. This smog, for example is much more noticeable in Prudhoe-Nuiqsut area than at Barrow or Atqasuk. Anyone who has traveled from Barrow to Nuiqsut and Deadhorse by plane can observe the marked change in the smog layer. 027

pg. III-C-59 section f Reference should be made to the annual Nuiqsut ice road. The road generally follows the course of the main channel of the Colville River from Nuiqsut to Oliktok, or to the nearest oil exploration ice road, whichever is closer. The road is created by blading the snow off of the river's ice cover, once sufficient ice thickness has been achieved. The road is used for the annual overland fuel haul, and for other material transport, and also gives Nuiqsut residents access to the Dalton Highway. 028

- Office of the Mayor
  Liaison for Research & Technical Assistance

pg III-C-1 Social Systems

1. Economy, 1st Paragraph, last sentence - "The North Slope Borough also may derive some benefits from the State portion of the royalties shared by the Federal Government. 029

What kinds of benefits? How? This statement is a "straw dog." Other than assistance to impacted municipalities through grants under 42 U.S.C. 6508, the only funds or benefits derived form the State would be those which trickle down to all municipalities in the State, i.e. "Permanent Fund (50% of remainder; Public School Fund (0.5% of remainder); and General Fund (49.5% of remainder). If the above statement is to remain, it must be adequately clarified and explained.

1. Economy, 2nd Paragraph, middle sentence - "However, only a small number of North Slope Native residents have worked at oil facilities at and near Prudhoe Bay, and this is very likely to be true in the future." 030

This statement is true; less than 15% of oil field workers are Native workers. The report implies this situation is by the "choice of the Native workers." This is not entirely true and it paints an erroneous picture of the situation and seems to be a justification for the defense of the oil industry. "Residents seem to prefer the employment created by the NSB to jobs potentially available in industry."

This comment and the one preceding it, veil the NSB's attempts at facilitating Native employment at Prudhoe at which the industry has balked and is only minimally or superficially in favor. The oil industry feels that they have no responsibility to accommodate the training of the unskilled laborers, to accommodate their cultural needs to participate in the subsistence hunting traditions, or to utilize more than only minimal and western industry traditional methods of recruiting Native employees. It is easier and less costly to import labor from other parts of Alaska as well as the "lower-48," particularly Texas, Oklahoma and Idaho. With job reductions imminent in the North Slope Borough, it would seem imperative that extraordinary attempts be made by industry to recruit and employ NSB residents to counter potential negative impacts on the communities and residents of NPRA development.

pg III-C-1 and C-2 31

1. Economy, - "This [above] historical information is relevant to assessing the potential economic affects of proposed oil and gas exploration and development on the North Slope Native Population."

031 This statement is a "self-fulfilling prophecy" offering a defense for industry to continue development on NPRA and conduct it in the same manner as they had in Prudhoe. It is a justification of industry's "can't do-can't hire Native" philosophy. It shows a defeatist attitude instead of a "pro-active" can-do philosophy or prespective. "Opportunities for" and "recruiting of" NSB residents is basically non-existent.

032 ii. NSB Revenues and Expenditures - Assessed NSB property value for FY 1986 through FY 1991 was approximately $12 to $13 billion. For FY 1991, all assessed property value was $13.1 billion, whereas assessed industrial property value at Prudhoe Bay was $12.4 billion, or 95 per cent of the total. Between 1982 and 1991, total NSB taxes collected peaked in FY 1987 at $249 million and declined in FY 1991 to $221 million."

The above comment is misleading and deceptive. By omission, the reader can be lead to believe that the current assessed valuation is similar to figures cited for FY 1986 through FY 1991. Therefore, it can also be assumed that the taxes collected are similarly high and will be similarly high in the future.

The total assessed valuation continues to decrease. In 1997 all assessed property value was $11.7 billion; in 1998 the total assessed value was $11.4 billion. It is projected that total assessed property value will decline dramatically through the year 2005 as follows:

1999 Total Assessed Value	$11,148,000,000
2000 Total Assessed Value	$10,825,000,000
2001 Total Assessed Value	$10,232,000,000
2002 Total Assessed Value	$9,618,000,000
2003 Total Assessed Value	$9,099,000,000
2004 Total Assessed Value	$8,562,000,000
2005 Total Assessed Value	$8,014,000,000

033 It is stated in the DEIS that, "Although the mill rate for operations is at the limit allowed by State statutes, the NSB's total mill rate is well under the limit and, therefore, the NSB administration is not now facing any legal constraints to raising the rate. Because the NSB mill rate is below the limit means that short-term revenue constraints do not drive current expenditures. In the short-term, a larger tax base resulting from NPRA leasing potentially would enable a decline in the mill."

This statement should be corrected to read, "Although the mill rate for operations is at the limit allowed by State statutes, the NSB's mill rate is unlimited for repayment of bonded indebtedness. Therefore, the NSB administration is not now facing any legal constraints to raising the mill rate to repay bonds. Because the NSB mill rate for repayment of bonded indebtedness is not limited, short-term revenue constraints do not drive current capital expenditures. In the short-term, a larger tax base resulting from NPRA leasing potentially could enable a reduction in the mill rate."

Although the above statement, as rewritten is correct, is the underlying hypothesis practical, realistic and/or feasible? It is possible, however, with the reduction in assessed values from Prudhoe Bay and the continued demand for capital improvements, it seems more likely they would only open up a window for additional bonding capacity and the sale of additional bonds.

However, a raise in our mill rate could severely jeopardize our perceived stability and reduce our bond rating therefore reducing our bonding capability and raising the rates we pay. Currently, there is a perceived cap on our mill rate equivalent to the 20 mills that the State is allowed to levy against oil and gas properties. Although the statutes appear to indicate that we are not limited by that cap, it might cause

033 legislative action to limit our taxing authority. By maintaining the buffer between 18.5 mills and 20 mills we can show that we have the capability to increase revenues if assessed values fall unexpectedly. In addition, it lets the State keep part of the money making them less likely to challenge our taxing authority.

034 pg III-C-37, Last Paragraph, 1- Column - Regarding, "Social Services" the DEIS refers to "grants acquired by or through the Inupiat Corporation of the Arctic Slope and other borough non-profits." It should read "Arctic Slope Native Association and other non-profits, the village and regional tribal governments."

Same paragraph - "Health and social-services programs have attempted to meet the needs of alcohol and drug-related problems with treatment programs and shelters for wives and families of abusive spouses and with greater emphasis on recreational programs and services."

The City governments have been attempting to develop recreational programs and services but have been seriously hampered by the lack of financial resources to accomplish their recreational objectives. The residents believe that recreational activities and sports are appropriate alternatives to alcohol and drug use as well as inappropriate behavior particularly for our youth, teens and young adults. However, without a source of funding for recreational facility development, their efforts are fruitless. Recreation is not a NSB Power, therefore all efforts at recreational development are the venue of the cities. With declining revenues from the State of Alaska, many NSB City governments can barely even function and have considered filing bankruptcy papers.

Same paragraph - Alcohol possession is not banned in Barrow. Also, the city of Kaktovik has a referendum vote scheduled to reverse the alcohol ban in that community.

035 pg III-C-37, 1- paragraph, 2- column - "What exists in the communities of the North Slope is "a unique lifestyle in which a modern cash economy and traditional subsistence are interwoven and interdependent."

This is basically a "dual economic system" through which the culture adapts and perpetuates itself. "North Slope residents exhibit an increasing commitment to area-wide political representation, local government and cultural preservation…" The above statement needs to include "HILC" regarding "cultural preservation" and the "revitalization of the IRA Tribal governments" regarding "political representation and local government."

The commitment to area-wide political representation and increased local government (referenced above) is a direct response to the reductions of assistance to its rural communities from the State with inadequate and dramatically declining revenues through the NSB and city governments and from the Federal Government Assistance and mandates to assist its IRA Tribal Governments. Partnering together, the Tribal Governments, City Governments and the NSB Government, may be able to provide programs, services and benefits to its residents that to date have been mainly provided by the NSB and only been minimally provided by either the tribal or city governments. The City governments cannot survive by continuing to rely entirely upon the State to exist as subdivisions of the State of Alaska. It seems almost as if the cities were created with a mandate from the State but with only enough resources to guarantee failure, and not success.

036 • Department of Planning & Community Services
Inupiat History Language & Culture Commission
pg.IV-A-44 In the reference to "Sacred Sites", BLM asserts that "no such sites have been identified in the planning area." In fact, there are "Sacred Sites" in the planning area. The lack of consultation prompted efforts to identify them. "Sacred Sites" are defined in the DEIS as "any specific, discrete,

narrowly delineated location" on federal land identified by Native tribes or a representative of a Native 036
religion as "sacred by virtue of its established religious significance." Omitting "or ceremonial use by" in the definition is misleading. This section should reference the definition of "Sacred Sites" contained in Executive Order 13007 in it's entirety. This section should also include the language regarding "Accommodation of Sacred Sites" where it states "In managing Federal lands, each executive branch agency with statutory or administrative responsibility for the management of Federal lands shall, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, (a) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites."

In the same section, the DEIS states, "If any sacred sites are identified during the comment period, BLM will analyze the impacts of the Proposed Action on the sites and address mitigating actions that could protect them." This implies that impacts will be analyzed only if sites are identified during the comment period. There is no language to protect sites should they be identified **after** the comment period.

Pg. III-C-7 The DEIS states "The number of TLUI locales in the "planning area" greatly exceeds the 037
number of recorded archaeological sites, suggesting that if cultural memory is a reliable manifestation of reality, there must be hundreds of as-yet undiscovered cultural sites within the planning area." This negative reference to traditional knowledge should be deleted. If substitute language is considered to acknowledge the fact that many "undiscovered" sites remain, the language should be respectful of the wisdom and knowledge of our elders.

Land Management/Permitting & Zoning 038
pg. III-C-40 The description of land ownership should note the complete history. Long before President Harding set the Naval Petroleum Reserve #4 aside with Executive Order 3797, the Inupiat had indigenous title to the land known as NPR-A. In fact the presidential executive order did not extinguish the Inupiat title to the land, only an act of Congress can extinguish aboriginal title to land. In 1968 (after the discovery of Pradhoe Bay) Congress began in earnest to extinguish the Inupiat title to land that included NPR-A and the Pradhoe Bay discovery. The end result was the Alaska Native Claims Settlement Act (ANCSA) in 1971, over the objections of the Arctic Slope Native Association (ASNA) partly because it excluded Inupiat land selections from traditional Inupiat lands in NPR-A. The NPR-A lands are the mostly heavily used traditional lands by the Inupiat of all land on the North Slope.

The Borough recommends the federal jurisdiction description be modified to include the above history to provide a full picture of the Inupiat connection to the land in NPR-A.

pg. III-C-41 This particular label is extremely offensive and does not acknowledge the Inupiat historical 039
use of lands within NPR-A. These uses are historically appropriate uses of land that supports the Inupiat in cultural and subsistence pursuits in NPR-A.

The Borough recommends the entire sub-heading be deleted from the final EIS.

pg. III-C-42 thru 44 The Borough recommends deleting the second to last sentence of the first paragraph 040
because DGC has published the ACMP enforceable policies.

One of the reasons the Inupiat have been so accepting of oil and gas industrial activity within areas they have historically used is that the Borough has strong planning, zoning and coastal management authority in areas where development has occurred. The Borough believes it is important to continue to have this same authority within the area of NPR-A and recommends that the Secretary of the Interior allow

application and implementation of the Alaska Coastal Management Program and the North Slope 040
Borough Coastal Management Program for NPR-A.

pg. III-C-45 In the second paragraph, the last sentence should be changed to read as follows: 041

Any new large-scale development outside the existing Resource Development District will require rezoning: a Master Plan for the development must be submitted to the NSB, which conforms to the Borough policies. The plan must be adopted by the NSB Assembly as an amendment to the existing official zoning map, changing the district from one district to the Resource Development District. The Master Plan shall be the guide for development of the land rezoned.

pg. III-C-45 thru 48 This section appears to completely ignore recreational use of the area by the Inupiat 042
through their cultural pursuits.

The Inupiat way of living, or *Iñuuniaqtuq*, involves more than hunting and fishing for food sources. It is encompasses many facets of living, including recreation and culture. In fact this section fails to acknowledge the presence of the Inupiat as an integral part of this land in NPR-A.

The North Slope Borough recommends a re-write of this entire section to acknowledge the presence of the cultural pursuits by the Inupiat in NPR-A.

pg. III-C-48 thru 52 The North Slope Borough opposes any and all efforts to establish the Colville river as a wild or scenic river. Borough residents have endured the designation of other lands (like Gates of the Arctic and ANWR) within the Borough which resulted in the restriction and criminalization of their lifestyle. The Colville is an important source of subsistence resources and well as a major transportation corridor for the Inupiat. Any effort to restrict or curtail transportation along the Colville will be vigorously opposed.

We believe the river is adequately protected and does not need a further federal designation to ensure it wildlife, recreational and visual qualities. We believe that if the federal government is seriously concerned about the physical and visual quality of the Colville river, then it will muster all efforts necessary to clean up the hazardous waste site created by the U.S. military at Umiat.

- Department of Wildlife Management

Environmental Justice 043
President Carter's February 11, 1994 Executive Order 12898 requires that federal agencies make achieving environmental justice part of their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority or low-income populations. The draft NPR-A IAP/EIS (p.IV-A-44) does not adequately explain how this goal will be achieved by the BLM in connection with any oil and gas leasing program conducted within the northeast planning area. The document does describe the minority and low-income status of North Slope residents who would be subject to the direct effects of any increased industrial activity in the northeast planning area. It does not describe how the impacts on our residents of NPR-A leasing, exploration, and development alone, or in combination with other regional development, compare with the totality of these impacts on U.S. residents other than those on the North Slope.

Clearly, it is Borough residents, and particularly those of Nuiqsut, who have borne the brunt of direct North Slope oil industry impacts to date. A map showing existing, planned, and potential North Slope oil and gas lease sales, exploratory operations, and development projects foretells a future level of cumulative impacts which has to be alarming to Nuiqsut. The Borough has used its taxing authority to secure sufficient revenues to greatly raise the standard of living of our residents to levels long taken for granted elsewhere in the country. Direct revenues from lands and waters leased and oil produced,

043

however, still go straight to the state and federal governments. The focus of Executive Order 12898 is on federal agency attention to any potential disproportionately high adverse effects. The Borough believes that in order to address whether the effects on our minority and low-income residents are disproportionately high, BLM must indicate what, if any, adverse effects other U.S. residents might suffer as a consequence of oil and gas leasing within the NPR-A. As in the case of all other North Slope industries activity to date, we believe that it is our residents who would face the direct risks of NPR-A development, while oil revenues would go elsewhere. Direct sharing of oil revenues with our impacted communities would offset some of the increased local burden of dealing with an increased level of industrial activity. The Borough recommends to the BLM that it first recognize the significant ongoing and increasing cumulative impact which North Slope industrial development has had on our people, and then take all necessary steps to see that revenues generated from oil leasing and development on federal lands be shared directly with our affected communities.

Cumulative Impacts

The impacts felt by both the human residents and wildlife resources of the North Slope Borough as a result of oil industry operations are not project-specifics, but rather, are the consequences of all past and ongoing activities taken together. A good example of these impacts are the demands placed on the community of Nuiqsut for services to the workers of ARCO's Alpine projects. None of the impacts were foreseen or discussed.

To date, federal and state regulatory and management systems have largely failed to address in any meaningful way this reality. Instead, they have focused on the causal effects of single actions; allowing incremental degradation of fish and wildlife habitat and subsistence opportunities without the holistic regional perspective which is a way of life for our people. The Borough recognizes the difficulty in administering our own Land Management Regulations. It is essential, therefore, that a framework be defined at the lease sale stage for addressing at a later time the potential cumulative impacts of individual proposed oil and gas lease sale reviews, adoption of a more consultative approach in dealing with local stakeholders will be an essential component of any solution to the difficult cumulative impacts issue. We renew that position here in offering a North Slope Borough NPR-A planning area preferred management alternative.

044

Subsistence

pg. III-C-10. Table III.C.3-1, "Resources Used in Barrow, Kaktovik, and Nuiqsut" The title of this table is incorrect, it should read "Atqasuk" instead of "Kaktovik". The table is misleading and unclear of its meaning as it is referenced throughout the text. The confusion lies in the term "used" and "harvested". The data presented in the table is also inconsistent. For example, the table shows that Barrow residents use Dall sheep and does not show that Atqasuk residents use marine mammals. Although as a footnote, it does state that Atqasuk residents use marine mammals but within the table it does not. Recommend using all known species harvested on the North Slope, because of the extensive sharing amongst all North Slope communities. Another example, Atqasuk should have humpback whitefish marked, since it was reported as being harvested in the 1994-95 subsistence study conducted by the North Slope Borough (Opie, Brower, and Bates, 1997).

045

pg. III-C-11. Table III.C.3-4, "Individual Subsistence Resource Percentages of Average Total Community Annual Subsistence Harvest", replace Nuiqsut data 1994-95 (Brower and Opie, 1997) with corrected Nuiqsut figure (see Attachment 1 for Memorandum regarding error) in regards to edible pounds. The Nuiqsut percentage for 1994-95 for hair seal is 2%. Two percent actually represents all marine mammals harvested during the study year, 1994-95, which includes 1 polar bear, and 23 ringed seals. It is incorrect to say that 2% represents only hair seals. Recommend using the term "edible material" or "edible pounds".

046

pg. III-C-11. Table III.C.3-3 "Participation in Successful Harvests of Selected Resources in Barrow and Nuiqsut (percentage of households per resource), does not include Atqasuk. The last sentence on p. III-C-8 refers to three communities Barrow, Nuiqsut, and Atqasuk, and Table III.C.3-3, represents only Barrow and Nuiqsut.

047

Table III.C.3-4 "Individual Subsistence Resource Percentages of Average Total Community Annual Subsistence Harvest", the Nuiqsut data 1994-95, for small land mammals is incorrect. The footnote is " Represents less than 0.1 percent, the footnote should be, Not harvested for food.

048

pg. III-C-12. b. Community Subsistence-Harvest Patterns:
Forth paragraph first sentence on p. III-C-12. "…III.C.3-4 shows individual species percentages of the total average subsistence harvest for each community.", is misleading. The table does not represent total average subsistence harvest, it implies only the percent of edible material.

049

The last sentence in the sixth paragraph, "Nuiqsut residents hunt bowheads only during the fall season.", it is known that some Nuiqsut hunters travel to Barrow to participate in the harvest of bowhead whales with Barrow whaling crews during the spring bowhead whaling season. Recommend changing to indicate when subsistence whaling for the community of Nuiqsut occurs, which is during the fall.

Barrow

050

pg. III-C-13. (a) Bowhead Whales
First paragraph under (a) Bowhead Whales, sixth sentence, "The locations of these camps depend on ice conditions and currents, normally, strong currents and many leads near Point Barrow prohibit crews from camping near the actual point." The last part of this sentence is confusing and should be removed, to read; "The locations of these camps depend on ice conditions and currents.".

051

pg. III-C-13. (c) Caribou:
The description of the Barrow subsistence use area for caribou too large. This area is describing the general Barrow subsistence use area, see Figure III.C.3-1 (Pederson, 1979).

052

pg. III-C-16. (d) Seals:
Ringed seal hunting is concentrated mostly in the Chukchi Sea. In this entire section (d) Seals, the Beaufort Sea needs to replaced with Chukchi Sea. The author of this section must have had these confused.

053

Last paragraph under (d) Seals, third sentence: bearded seals are hunted in both the Chukchi and Beaufort seas during summer months, not from spring hunting camps in the Beaufort Sea.

054

pg. 11-C-18. (e) Fish:
First sentence under (e) Fish, top of p. III-C-18, tomcod are harvested during the fall and early winter when there is still day light.

055

The third sentence "From Peard Bay west of Barrow…, to the end of this paragraph is very confusing and in most cases is not true. Recommend deleting this section. The next paragraph, remove the first part of the first sentence "While coastal fishing can be an important source of fish," and begin the paragraph with "Most of the fishing occurs…".

056

pg. III-C-18. (f) Walruses: (should be "walrus" throughout this entire section)
The first sentence; walrus are hunted during the summer months, not the spring.

pg. III-C-18. (g) Migratory Birds:
The third sentence should read "in May", instead of "in June". 057

The last sentence of the first paragraph; families who are not involved with spring whaling may go out geese hunting even if whaling is still going on, or even successful crews may be geese hunting while others are still whaling. 058

The second paragraph, first sentence describes the location of the shooting station, "...Beaufort Sea from Elson Lagoon." Replace Beaufort Sea to Chukchi Sea, to read "...Chukchi Sea from Elson Lagoon.". 059

Atqasuk
pg. III-C-19. (2) Atqasuk:

Atqasuk is not the only inland community close to the planning area. Nuiqsut is also considered an inland community. 060

The following sentence, "Areas exclusive to the community and heavily used by local subsistence hunters are: the middle and upper Meade and Avalik rivers, the upper Okpilisak, the Topagaruk, and the Nigisaktuvuk rivers.", should include the entire Meade River as being is heavily used by Atqasuk hunters. 061

Table III.C.3-1, the title is incorrect, it should read "Atqasuk" instead of "Kaktovik". 062

Figure III.C.3-6 shows subsistence areas used for Atqasuk, this information was collected nearly 20 years ago. 063

pg. C-III-19. (a) Caribou:
Caribou hunting takes place every month of the year. It should be noted that 187 is only the "reported" total harvested. 064

The last sentence in the first paragraph under (a) caribou, the reference (Opie, Brower, and Bates, In prep.), should be (Opie, Brower, and Bates, 1997). 065

The second paragraph under (a) caribou, "caribou camps", should be replaced with "hunting camps" or "campsites". 066

pg. C-III-19. (b) Fish:
Summer gillnetting begins in June. Narvaqpak is a popular fishing area. Fall and early winter is known as the best time for fishing. 067

The second paragraph under (b) fish, first sentence, "Humpback whitefish and least cisco accounted for 96% of the summer catch in 1983 (the only year of harvest data). "What about the harvest data from North Slope Borough 1994-95 subsistence harvest study for Atqasuk (Opie, Brower, and Bates, 1997)? 068

pg. C-III-19. (c) Migratory Birds:
White-fronted geese are the most common goose harvested by Atqasuk hunters. 069

Ptarmigan are also heavily hunted during the fall in addition to the spring months. Moose are rare near Atqasuk, but are known to be harvested. 070

Nuiqsut
pg. III-C-23. (3) Nuiqsut:
Second sentence remove beluga whales and walrus as being described as important subsistence resources used by Nuiqsut. This was requested by Nuiqsut residents. What is the difference between coastal and marine birds? 071

Fifth sentence should read "Nuiqsut" instead of "Atqasuk". 072

Table III.C.3-10, this table is based on old data (1979). It was pointed out from Nuiqsut residents that much of the subsistence section was based on old data, and that over time, change is likely to happen. 073

Table III.C.3-1, same comment as mentioned in the Barrow and Atqasuk comments. 074

Figure III.C.3.11, again is based on old data, and the subsistence cycles have most likely changed. 075

pg. III-C-24. (a) Bowhead:
The year 1993 is referenced as being a year of an unsuccessful bowhead whale harvest for Nuiqsut. Then the following sentence describes the "1993" ADF&G subsistence survey indicating that bowhead whales were harvested by Nuiqsut residents (see Table III.C.3-9). 076

pg. III-C-24. (b) Beluga Whales:
Nuiqsut residents indicated that beluga whales are not significant to the subsistence cycle of Nuiqsut residents. Figure III.C.3-11, is based on old data (1979). Unfortunately, the table combined bowhead and beluga in one category. 077

pg. III-C-24. (c) Seals:
The references stated in this section are from 1979. This is another indicator that there is a need for current information to be documented in regards to subsistence activities. 078

pg. III-C-24. (d) Walruses: (should be "walrus")
Some Nuiqsut residents indicated that walrus are not significant subsistence resource. It is inadequate to say that "walrus hunting occurs along the entire Beaufort Sea coast from Cape Halkett to Anderson Point.". If walrus were ever to be harvested by Nuiqsut hunters, it would be an incidental harvest. 079

pg. III-C-24. (e) Polar Bear:
The point Thomas Napaugeak was making is that in previous EIS's the importance of polar bears was incorrect. Recommend stating that polar bears are not significant subsistence resource for the community of Nuiqsut. Again, if ever harvested it would be an incidental harvest. 080

pg. III-C-24. (f) Caribou:
In regards to the peak harvest occurring in April through June and September and October is based on Figure III.C.3-11, again based on old data, 1979. 081

pg. III-C-25. (f) Caribou:
The section describing the total subsistence harvest in edible pounds for caribou (Brower and Opie, 1997), needs to be changed to 58% (Attachment 1). A memorandum explaining an error in the calculations in determining the percentage of edible material is included as Attachment 1. 082

The last paragraph in the caribou section, the correct percentage for caribou and moose should be 63%, instead of 69% (Attachment 1). 083

pg. III-C-28. (g) Fish:
The second paragraph, last sentence, the correct percentage for fish should be 30%, instead of 25% (Attachment 1). 084

Fish are eaten fresh, frozen, and dried. Salmon are harvested in low numbers and usually are eaten fresh (cooked). 085

pg. III-C-28-29. (h) Marine and Coastal Birds:
The heading "Marine and Coastal Birds", is that the appropriate heading? What is the difference between marine and coastal? 086

As recommended by some Nuiqsut residents, oldsquaw and pintail should be removed from this following sentence, "The most important species for Nuiqsut hunters are the Canada and white-fronted goose, brant, eiders, and oldsquaw; pintail ducks and the snow goose are harvested in low numbers." as these ducks are not considered as important subsistence resources. 087

pg. III-C-29. (h) Marine and Coastal Birds:
What is the difference between "marine" and "coastal" birds? 088

The correct percentage for birds should be 5%, instead of 4% (Attachment 1). 089

Waterfowl hunting mostly occurs during the spring, beginning in "May" instead of "June". 090

The harvest of Brant does not occur in August and early September. As requested by some Nuiqsut residents, remove the last sentense. 091

pg. III-C-29. (i) Moose:
The first sentence indicates that moose are harvested from July to October by boat on the upper Colville (upriver from Nuiqsut), Chandler, and Itkillik rivers (Fig. III.3.11). The timing of harvest varies depending on what the current hunting regulations are. Harvest data shows that moose have been harvested during the winter months by snowmachine (Brower and Opie, 1997). 092

The correct percentage for moose should be 5%, instead of 21% (Attachment 1). 093

Why is muskox not mentioned in the Nuiqsut section? Muskox is a subsistence resource harvested by Nuiqsut residents. 094

Nuiqsut residents pointed out that a few rivers are mislabeled on maps used throughout the DEIS. These include Judy Creek and Ubutuoch River. 095

Again we thank you and your Staff for the opportunity to comment on this DEIS. We believe you will find from your review of our comments that we have studied this matter very carefully because of its obvious impacts on our lifestyle and culture. We also believe you will see the wisdom of what we have offered in our proposed alternative for NPR-A.

Sincerely,

Benjamin P. Nagozuk
Mayor

Attachments
cc: Tom Allen, Bureau of Land Management, Alaska State Office
Deborah Williams, Department of Interior, Alaska State Office
Governor Tony Knowles, State of Alaska
Commissioner Frank Rue, State of Alaska, Department of Fish & Game
Commissioner John Shively, State of Alaska, Department of Natural Resources
Marie Carroll, Chief Administrative Officer, NSB
Charles D.N. Brower, Director, Wildlife Management, NSB
Karen Burnell, Director, Planning & Community Services, NSB
Richard Glenn, Director, Energy Management, NSB
Taqulik Hepa, Deputy Director, Wildlife Management, NSB
Jon Dunham, Deputy Director, Planning & Community Services, NSB
Jana Harcharek, Liaison Officer, Iñupiat History, Language & Culture Commission, Planning & Community Services, NSB
Craig George, Wildlife Biologist, Wildlife Management, NSB
Dan Bevington, GIS Analyst, Planning & Community Services, NSB
Harry Brower, Jr., Subsistence Resource Specialist, Wildlife Management, NSB
Becky Gay, Government Affairs Administrator, NSB
Tom Lohman, Environmental Resource Specialist, Wildlife Management, NSB
Dr. Todd O'Hara, Research Biologist, Wildlife Management, NSB
Dorothy Hopson, Mayor, City of Anaktuvuk Pass
Herman Kignak, Mayor, City of Atqasuk
Jim Vondersteane, Mayor, City of Barrow
Leonard Lampe, Mayor, City of Nuiqsut
Lydia Agnasagga, Mayor, City of Wainwright

Attachment 1

NORTH SLOPE BOROUGH
Department of Wildlife Management
P.O. Box 69
Barrow, Alaska 99723

Phone: Central Office: (907) 852-2611 ext. 350
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Fax: (907) 852-0351 or
(907) 852-8948

MEMORANDUM

TO: WHOM IT MAY CONCERN

FROM: Harry Brower, Jr., Subsistence Research Coordinator HB
Raynita Hepa, Deputy Director Raynita Hepa

DATE: February 5, 1998

SUBJECT: CORRECTION OF ERROR IN THE TECHNICAL REPORT *"NORTH SLOPE BOROUGH SUBSISTENCE HARVEST DOCUMENTATION PROJECT: DATA FOR NUIQSUT, ALASKA FOR THE PERIOD JULY 1,1994, TO JUNE 30, 1995"*

An error has been called to our attention in the Technical Report *"North Slope Borough Subsistence Harvest Documentation Project: Data for Nuiqsut, Alaska for the period July 1, 1994, to June 30, 1995"*, concerning the 5 moose harvested and the percentages of edible material that they provide. One moose provides an estimated 500 pounds of edible material. During the one year period there were 5 moose harvested as stated in our report. This resulted in an estimated 2500 pounds of edible moose material for that year. Unfortunately a typographical error resulted in the 2500 pounds being reported as 12,500 pounds.

The use of this incorrect number (12,500 instead of 2,500) in our calculations resulted in additional errors appearing in Figure 3. Since values in Figure 3 were used in various parts of our report text the error caused further problems in sections 4.3, 5.2, 5.2.1, 5.2.2, 5.3, 5.6, and 5.8.

The basic problem is that this error has resulted in an overestimation of the importance of moose.

In order to correct this unfortunate situation 5 pages should be replaced (pages 9, 15, 26, 27, and 29).

Enclosed are the corrected 5 pages, please substitute these in your copy of the report. A revised technical report is in the process of being published with the corrected changes. The revised report will be distributed as they are complete. Thank you for your understanding.

ENCLOSURES (5)

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Figure 2 displays the percent of harvest instances that resulted in sharing (giving away) by Nuiqsut hunters during the study period. Two-hundred twenty-six (87%) of the 259 harvest instances resulted in sharing, while 33 instances (13%) did not result in sharing. All forty-nine households who harvested reported that they shared part of the harvest at least once.

4.3 Harvest of all Species

Figure 3 displays the estimated percentage of edible pounds provided by the various harvest items taken by Nuiqsut hunters during the study period (July 1, 1994, to June 30, 1995). The estimates of edible pounds derived from harvest items are those used in the Alaska Department of Fish & Game Community Profile Database (ADF&G, 1995). As can be seen in Figure 3, caribou provided 58% of the edible pounds, fish provided 30%, moose provided 5%, birds provided 5%, marine mammals provided 2%, and plants provided less than 1%. Note that in determining pounds of edible material, furbearers (wolves, wolverines, brown bears, and foxes) were not included.

Table 1 presents all reported harvest items taken during the study period. Harvest items are the individual subsistence use resources listed in Appendix 2 (for example caribou, moose, and grayling). Harvest items are broken down by the number taken by month, total reported for the 71 households interviewed, and an estimated community total (83 households) for each harvest item.

Figure 4 displays the reported total harvest items (not including fish) taken during the study period. Geese unidentified (457), caribou (249), and cider unidentified (90) were harvested in the highest numbers. Polar bear (1), sandhill crane (1), tundra swan (1), and all berries were harvested in the fewest numbers.

Figure 5 displays the reported total number of fish harvested. Fish were separated out into their own figure since the number of fish harvested was large and they can be better represented in their own figure. The four most frequently harvested fish were arctic cisco (9486), broad whitefish (3120), least cisco (750), and whitefish unidentified (475). It is important to note that one household reported that they harvested "sled loads" of arctic cisco and humpback whitefish "every couple of days" throughout the months of October and November. Unfortunately in this situation we were not able to determine the numbers of fish harvested from the information provided by the surveyed household, so therefore we did not include these fish in the reported figures.

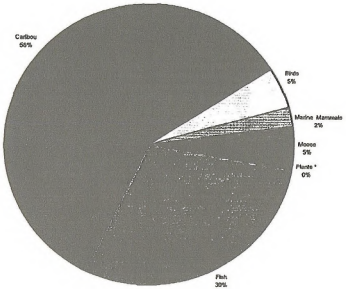
4.4 Harvest of Caribou

4.4.1 Harvest of caribou by month

Figure 6 shows the reported total number of caribou (249) harvested by month. Most of the caribou were taken during the months of October (80) and July (63). The fewest caribou were harvested in May (2) and December (4).

Figure 3

Percent of Harvest in Edible Pounds by Category by Nuiqsut Hunters
July 1, 1994, to June 30, 1995



* Note that the harvest of plants accounted for less than 1% of the edible pounds in the subsistence harvest.

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5. DISCUSSION

The community of Nuiqsut is located in the Colville River Delta, 160 miles east of Barrow and about 20 miles south of the Beaufort Sea. This is the home of the Inupiat Eskimos who are known as "Kuukpikmiut" (people of the Colville River). The Kuukpikmiut have a lifestyle that is heavily dependent on the subsistence harvest of terrestrial mammals, marine mammals, waterfowl, and fish. Twenty-nine harvest items were reported to be taken by Nuiqsut hunters during the study period of July 1, 1994, to June 30, 1995.

5.1 Sharing of the Harvest

One of the most important traditions in the Inupiat culture is the sharing of subsistence resources. Sharing subsistence resources is a vital component in the survival of the community as whole. Our results clearly show that sharing of the harvest is commonly practiced within the community of Nuiqsut.

Our findings show that of the 82 households surveyed (71 actually interviewed), 49 reported that they harvested subsistence resources during the study period and all 49 shared (gave away) some of their resources. There was a total of 259 harvest instances and 226 (87%) of these instances resulted in sharing (Figure 2).

5.2 Terrestrial Mammals (Caribou and Moose)

The harvest of terrestrial mammals (caribou and moose) accounted for 63% of the edible pounds of the subsistence harvest by Nuiqsut hunters during the study period (Figure 3). Previous data show that in 1992 terrestrial mammals accounted for 27% (George and Fuller, in prep.) and in 1993 they accounted for 33% (Pedersen, unpublished data). The reason why our data show a higher percentage for terrestrial mammals is probably due to the unsuccessful harvest of bowhead whales during our study period (Suydam et al., 1994).

5.2.1 Caribou

Figure 3 shows that caribou dominated the subsistence harvest in edible pounds with 58%. The reported number of caribou harvested during the study period was 249. Other data show that in 1985 an estimate of 270 caribou were harvested (Pedersen, unpublished data), in 1992 an estimate of 278 caribou were taken (George and Fuller, in prep.), and in 1993 an estimate of 485 caribou were taken (Pedersen, unpublished data). It is important to keep in mind that the total harvest of 249 in the present study is not an estimate but is the reported number of caribou taken.

The harvest of caribou occurred during all months of the year (Figure 6), although the availability of caribou varies throughout the seasons. It is known that hunters may travel long distances by snowmachine or boat to harvest caribou.

Seventy-three percent of the harvested caribou were male, 13% were females, and 14% were of unknown sex (Figure 8). Most of the caribou were harvested during the months of July (63), August (32), and October (80) (Figure 6). Figure 6 shows that the harvest of caribou decreased during the month of September (as compared to July and August) with only 6 harvested. Late August and September are when Nuiqsut hunters concentrate their hunting efforts in an attempt to harvest bowhead whales. The types of transportation used in the harvest of caribou during the study period were snowmachine, boat, truck, and by foot.

5.2.2 Moose

Moose are typically harvested by Nuiqsut hunters during the fall along the upper Colville River (George and Fuller, in prep.). According to the ADF&G, in the early 1990s 3 to 6 moose were annually harvested by Nuiqsut subsistence hunters (Carroll, pers. com.). During this study period (July 1, 1994, to June 30, 1995) a total of five moose were harvested (Figure 11). The subsistence harvest of moose accounted for 5% of the edible pounds (Figure 3). The subsistence harvest of moose occurred during the months of July, August, September, October, and January. The types of transportation used in the harvest of moose were boat and snowmachine.

5.3 Fish

During the study period the harvest of fish accounted for 30% of the edible pounds in the subsistence harvest (Figure 3). In 1992 fish made up an estimated 34% of the edible pounds of the subsistence harvest (George and Fuller, in prep.) and in 1993 the estimated percentage was 33 (Pedersen, unpublished data).

It is important to note that in the present study one household reported that they harvested "sled loads" of arctic cisco and humpback whitefish "every couple of days" throughout the months of October and November. Unfortunately we were not able to determine the number of fish harvested from the information provided by the surveyed household, therefore we did not include these fish in the reported figures. This means that our data under report the total fish harvest.

Eleven types of fish (total harvested 14,650) were reported as being harvested during the study period. These consisted of arctic cisco, broad whitefish, least cisco, whitefish unidentified, grayling, humpback whitefish, burbot, fish unidentified, northern pike, humpback salmon, and arctic char (Figure 5). Arctic cisco were harvested in the greatest numbers with 9486 taken between the months of September and January. Broad whitefish were the second most frequently harvested fish with 3120 taken. The majority of the broad whitefish were taken during the months of July (1535), October (855), and November (500). The fish taken in the fewest numbers were arctic char (8) and humpback

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wolverines, and 5 arctic foxes were estimated to have been harvested (George and Fuller, in prep.). The types of transportation used by hunters in the present study in the harvest of furbearers were snowmachine and truck.

5.6 Birds

Nuiqsut hunters actively harvest a variety of bird species ranging from ducks to geese to ptarmigan. The harvest of birds accounted for 5% of the edible pounds of the subsistence harvest for Nuiqsut hunters during the study period (July 1, 1994, to June 30, 1995) (Figure 3). In 1992 the harvest of birds accounted for an estimate of 3% of the edible pounds of the subsistence harvest (George and Fuller, in prep.) and in 1993 birds accounted for an estimate of 2% (Pedersen, unpublished data).

The types of birds harvested during the study period consisted of eiders, geese, ptarmigans, sandhill crane, and tundra swan (Figure 10). Geese unidentified were harvested in the greatest number with a reported total of 457. The harvest of geese peaked in May with 409 taken. Harvest estimates for 1992 indicate that Nuiqsut hunters harvested at least 14 different species of birds which included willow ptarmigan, white-fronted geese, whistling swan, spectacled eider, snow goose, sandhill crane, rock ptarmigan, pintail duck, oldsquaw, king eider, greater scaup, common eider, Canada geese, and black brant (George and Fuller, in prep.). The types of transportation used in the harvest of birds in the present study were snowmachine, truck, and by foot.

5.7 Plants

During the study period the harvest of plants accounted for less than 1% of the edible pounds in the subsistence harvest (Figure 3). In 1992 plants also made up less than 1% of the edible pounds of the subsistence harvest (George and Fuller, in prep.). The types of plants harvested during our study included salmonberries, blueberries, blackberries, and cranberries. In 1992 the types of plants harvested were salmonberries, blueberries, and cranberries (George and Fuller, in prep.).

5.8 Conclusion

Eighty-two (71 actually interviewed) of the 83 households in Nuiqsut were surveyed regarding the number of subsistence harvest items that were harvested during the study period of July 1, 1994, to June 30, 1995. Detailed harvest information was collected for all subsistence use species taken by residents of Nuiqsut (see Appendix 2 for master species list pertaining to NSB). Our findings show that 29 harvest items were reported as being harvested by Nuiqsut hunters. The key harvest items were caribou and moose for terrestrial mammals, arctic cisco and broad whitefish for fish, geese unidentified and eider unidentified for birds, wolf for furbearers, and salmonberries for vegetation.

During this study period the most important harvest item was caribou, which accounted for 58% of the edible pounds of the subsistence harvest (Figure 3). The

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1669-001
The ANCSA land conveyances are not discretionary on BLM's part and are not subject to this IAP/EIS. However, the BLM and Kuukpik, Nuiqsut's ANCSA corporation, are in consultation to expedite final selection and conveyance of the village corporation's entitlement. Please see Response 1669-012.

1669-002
Please refer to Section II.G. Lands in the planning area are identified desirable for retention. Future land exchange proposals must be submitted, analyzed, and shown to be in the public interest.

1669-003
Please see Response AT02-001.

1669-004
The Preferred Alternative in the final IAP/EIS includes important elements of the North Slope Alternative. The BLM is committed to consultation with the Borough, others with regulatory or resource expertise, or those whose lives may be affected by actions in the planning area. See Preferred Alternative Stipulation 61 describing the consultation program and Preferred Alternative Stipulation 62 describing consultation areas.

The BLM is unable to adopt all aspects of the Borough's consultation and consensus proposal. First, while Federal plans are required to consider State and local plans and minimize inconsistency, actions are directed by Federal laws and policies. The appeal process the Borough suggests would improperly elevate the coastal management plan above Federal authority. Second, appointment of a hearing officer whose decision is to be appealed through the Federal courts ignores the internal appeals process—specifically the Interior Board of Land Appeals. In addition, the hearing officer would add to the administrative bureaucracy.

1669-005
(a) **Traditional Land Use Sites:** This comment is addressed in Preferred Alternative Stipulation 64.
Long-term Camps and Cabins: This comment is partly addressed by Preferred Alternative Stipulations 23, 26, 47 and 62. The BLM has determined that a 1-mi permanent surface facility restriction around these sites (except roads and pipelines are allowed up to ¼ mi) is a reasonable compromise. This restriction recognizes the camp/cabin user's desire for privacy and unhindered use of the site and does not unduly restrict approved surface occupancy by others and access to subsistence resources. The 1-mi limitation also reduces the potential for de facto exclusion of other surface uses in areas highly concentrated with camps and cabins, e.g., around Teshekpuk Lake and adjacent to Fish Creek. Preferred Alternative Stipulations 23 and 26 prohibit seismic activities, overland moves, and exploratory activities within 1,200 ft of camps and cabins. The BLM believes this is a reasonable compromise because camps and cabins are less likely to be occupied during the winter months and the disturbance of subsistence use will be minimized. Stipulation 62 provides for a 2-mi consultation zone around camps and cabins.

(b) **Negliq Channel (Colville River):** Permanent oil and gas facilities are prohibited within 1 mi of the Colville River in Preferred Alternative Stipulation 39g. The NSB's request for a 3-mi setback was not considered because lands west of the Negliq Channel are owned primarily by the Kuukpik Corporation.
Fish Creek: This comment is addressed in Preferred Alternative Stipulations 39 and 62. Stipulation 39 prohibits surface facilities within 3 mi of the Fish Creek high-use area and within ½ mi of the Fish Creek moderate-use area. The BLM does not believe that the NSB's recommended 2-mi setback on the moderate-use areas of Fish Creek is reasonable. Stipulation 62, which creates a 2-mi consultation zone adjacent to high- and moderate-use sections of Fish Creek, will give local users an opportunity to raise and resolve site-specific surface occupancy issues within the consultation zone.
Judy and Kealok Creeks: Preferred Alternative Stipulations 39 addresses comments specific to Judy Creek. Portions of lower Kealok Creek identified in Response 1669-020 as important for subsistence use are within the area of Teshekpuk Lake in which no surface occupancy for oil and gas activities would be allowed under the Preferred Alternative.

(c) **Teshekpuk Lake:** These comments are addressed in Preferred Alternative Stipulation 39.
Miguakiak River: These comments are addressed in Preferred Alternative Stipulation 62.
Naluakruk Lake: Preferred Alternative prohibits leasing, exploration, and construction of any facilities within the Goose Molting LUEA, including the area around Naluakruk Lake.

1669-006
The Preferred Alternative prohibits leasing, exploration, and the construction of oil and gas facilities within the Goose Molting LUEA. Comments regarding "waste" are addressed in Preferred Alternative Stipulations 2 and 3.

1669-007
Comments are addressed in Preferred Alternative Stipulations 29 (caribou study), 31 (caribou corridor), 49 (ground transportation), and 52 through 57 (aircraft restrictions).

1669-008
Please see Response 1660-005. In addition, this comment is addressed by Preferred Alternative Stipulation 39 (which requires a ½-mi no-surface-facility zone around Teshekpuk Lake) and by Preferred Alternative Stipulations 20 and 41. Water withdrawal during the winter months from rivers and streams, including the Ikpikpuk, is prohibited. Withdrawl from fish-bearing lakes is prohibited, unless the lake is >7-ft deep. Under these circumstances, withdrawal is limited to 15 percent of the estimated free-water volume (excluding the ice).

1669-009
The Borough's comments were considered in formulating the Preferred Alternative. No permanent surface facilities, except necessary roughly perpendicular transportation crossings, would be allowed within 3 mi of Fish Creek below Sec. 31, T. 11 N., R. 1 E., UM. Above that point, no permanent surface facilities, except necessary roughly perpendicular transportation crossings, would be allowed within ½ mile of Fish Creek. In addition, lessees would be specifically required by Preferred Alternative Stipulation 62 to engage in a consultation process with affected communities before exploration or development actions are taken within 3 mi of the creek below Sec. 31, T. 11 N., R. 1 E., UM and within 2 mi of the creek above that point.

1669-010
The Preferred Alternative will forbid permanent surface facilities in these caribou corridors.

1669-011
Native allotment conveyances are not discretionary on BLM's part and are not subject to this IAP/EIS. However, the BLM has focused special emphasis on Native allotments in the planning area. In summer 1997, the BLM located the "points-of-beginning" for all allotments in the planning area. This summer, the agency is surveying the allotments. The BLM normally completes conveyance of Native allotments about 18 months after the allotments are surveyed.

1669-012
Lands currently selected by Kuukpik near its village would not be offered for lease sale under any of the alternatives. Figures II.C.1-1 to II.C.1-5 indicate Kuukpik's land selections. Under the Preferred Alternative, the BLM would defer from leasing (in its first lease sale) those additional lands Kuukpik identifies for selection.

1669-013
Please see Response 1669-002.

1669-014
Please see Response AT02-001.

1669-015
The Preferred Alternative calls for a Colville River Management Plan for the Special Area. The plan would address subsistence, wildlife, recreation, paleontological, and other issues related to the Special Area. The plan would be drafted in cooperation with adjacent landowners and other affected parties.

1669-016
Please see Response 1951-006.

1669-017
Federal law requires that the State, in allocating its 50-percent share of sales, rentals, and bonus royalties from any leasing in the NPR-A, give "priority to use by subdivisions of the State most directly or severely impacted by development of oil and gas" in the Reserve (P.L. 96-514). Under the law (AS 37.05.530), funds the State receives from leasing on the NPR-A are placed in the NPR-A Special Revenue Fund. These impact funds are distributed to communities through a grant program (19 AAC 50) administered by the Department of Community and Regional Affairs. If a community feels that the State has violated the Federal law, its remedy is to bring suit against the State in the courts.

1669-018
Federal law does not allow BLM to dictate how lessees market or otherwise dispose of leased oil and gas, even for a worthy goal of supplying local community needs.

1669-019
a. **Long-term cabins and campsites:** Please see Response 1669-005. Preferred Alternative Stipulation 62 also provides for a 2-mi consultation zone around all long-term cabins and campsites.
b. **Caribou insect relief habitat:** Stipulation 26 (Alternatives A-E) has been deleted from the Preferred Alternative Stipulations, given that the Preferred Alternative prohibits leasing, exploration, production, and construction of oil and gas facilities in the Goose Molting LUEA. The 2-mi insect-relief corridor is encompassed within the Goose Molting LUEA. Without exploration and development, there is no need for consultation.
c. **Colville River (south of Nuiqsut):** Given the significance of the diverse surface resources, fish and wildlife habitat, and subsistence uses within the Colville River corridor, BLM has identified a 1-mi surface occupancy setback along the western bank/bluff of the river as described in Preferred Alternative Stipulation 39. Pipeline crossings of the Colville River will be considered on a case-by-case basis.
d. **Colville River Raptor, Passerine and Moose LUEA:** Please see Preferred Alternative Stipulation 62, which creates a 2-mi consultation zone along the Colville River in the LUEA.
e. **Colville River (Neqliq Channel):** The NSB's request for a 3-mi no-surface-facilities zone along the Neqliq Channel has been rejected because this land is owned by the Kuukpik Corporation on the western bank and the State of Alaska on the eastern bank.
f. **Cultural sites:** In addition to protection under Federal and State law, cultural sites will be protected as provided by Preferred Alternative Stipulations 64 and 75 and 39 and 41. The stipulations provide limitations on surface occupancy and disturbance adjacent to waterbodies. Consultation with impacted communities by industry before exploration or development and production plans are submitted is required in Preferred Alternative Stipulation 61.

1669-020
a. **Fish Creek (moderate subsistence use area):** Please see Response 1669-005(b).
b. **Fish Creek (high subsistence use area):** Please see Response 1669-005(b).
c. **Goose molting lakes (high use):** The Preferred Alternative provides that the Goose Molting LUEA is unavailable for leasing for the life of the current land management plan and prohibits construction of oil and gas facilities in the area. Consequently, Stipulation 25 (Alternatives A-E) regarding goose-molting setbacks has been deleted.
d. **Goose molting lakes (moderate use):** Please see 1669-020c above.
e. **Paleontological resources:** Concerns by local communities regarding paleontological resources should be identified during the consultation process provided in Preferred Alternative Stipulation 61. The BLM has sought to minimize disturbance to paleontological resources by requiring an advance inventory and cessation of work upon discovery; this is provided in Preferred Alternative Stipulation 75.
f. **Ikpikpuk River:** This comment is addressed in Preferred Alternative Stipulation 39a.
g. **Ikpikpuk River (paleontological resources):** Please see 1669-020e and f above.
h. **Judy Creek:** This comment is addressed in Preferred Alternative Stipulation 62f.
i.& j. **Kealok Creek:** Approximately the lowest 7 mi of Kealok Creek is within the area south of Teshekpuk Lake in which no surface occupancy for oil and gas activities would be allowed under the Preferred Alternative.
k. **Kikiakrorak River:** This comment is addressed in Preferred Alternative Stipulation 62h.
l. **Kogosukruk River:** This comment is addressed in Preferred Alternative Stipulation 62g.
m. **Miguakiak River:** This comment is addressed in Preferred Alternative Stipulation 62c.
n. **Naluakruak Lake:** Under the Preferred Alternative, the area encompassing Naluakruak Lake will be unavailable for leasing. No construction of oil and gas facilities will be allowed.
o. **Pik Dunes:** The comments are partly addressed in Preferred Alternative Stipulation 45. The BLM supports construction of essential transportation crossings in this area. The Preferred Alternative also provides that the Pik Dunes should be added to the Teshekpuk Lake Special Area.
p. **Steller's and spectacled eiders:** Eiders will be protected (along with other threatened and endangered species) by Federal law as administered by the FWS.
q. **Teshekpuk Lake basin:** This comment is partly addressed in the Preferred Alternative prohibition on leasing for most of Teshekpuk Lake. Western and southern portions of the lake are available for leasing, but construction of all permanent surface facilities is prohibited. Also, please see Preferred Alternative Stipulation 39.
r. **Teshekpuk Lake calving area:** In those calving areas that are available for leasing under the Preferred Alternative, no permanent oil and gas facilities are allowed. Caribou calving populations are protected by restrictions in Preferred Alternative Stipulations 49, 50, 52, 53, 54, and 55.
s. **Teshekpuk Lake caribou movement corridors:** Please see 1669-020r above. The comment is addressed in Preferred Alternative Stipulations 32, 33, 34, 35, 36, and 37.
t. **Teshekpuk Lake coastal setback:** This comment is addressed in Preferred Alternative Stipulation 39.
u. **Furbearer trapping areas:** This comment is addressed in Preferred Alternative Stipulations 59, 60, 61, and 62.
v. **Unspecified fish-bearing waterbodies:** This comment is addressed in Preferred Alternative Stipulation 41.

1669-021
We considered preparing a map showing past seismic operations. Any such map, however, is fraught with problems. To show only Navy and Husky activity would not be representative and would ignore the seismic surveys conducted over the last 16 years. During the latter years, seismic operations have been conducted by private contractors, and their information is proprietary.

General descriptions of the areas covered by seismic surveys, however, can be given. As the commenter notes, seismic surveys "cover the area." The greatest intensity of seismic studies has been in the more accessible part of the NPR-A from Prudhoe Bay. Industry's seismic surveying conducted since the early 1980s has concentrated on the eastern part of the Reserve closer to existing infrastructure. In the last 10 years, surveys generally have followed a swatch between Nuiqsut and Barrow, roughly paralleling the Barrow Arch.

1669-022
The importance of Alpine-like rock structures in the planning area is discussed in the Summary.

1669-023
Please see revisions made to Section III.A.1.f(1)(b).

1669-024
Please see revisions made to Section III.A.1.f(1)(d).

1669-025
The former Umiat Air Force Station site (Umiat) is addressed in Section III.A.1.g along with other hazardous- and solid-waste sites in the Northeast NPR-A Planning Area. Site investigation and cleanup activities at Umiat are coordinated by the U.S. Army COE under the Former Used Defense Site program. Detailed site descriptions, proposed work, and cleanup activities can be obtained through the Alaska District of the COE. All PCB-contaminated soil and groundwater on the main gravel pad are scheduled to be removed in 1998, and the COE will start investigating the 11 Navy exploration wells onsite. Cleanup options are scheduled in late 1998 to be identified for the main gravel pad, airstrip, and landfill. The COE also intends to solicit comments from the public at this time. Cleanup design and implementation of the 11 Navy exploration wells is expected in 1999.

1669-026
Magoon and Claypool (1988) place these seeps along the river, not in the river. The cited EIS states that seeps are in the Colville River drainage. The Umiat oil seep is mentioned in Section III.A.2.b(5).

1669-027
The BLM believes that there might be instances of a distinct change in the atmospheric coloration in a local area. Localized concentrations of arctic haze can cause this change. There is no indication that heavy motor-vehicle traffic, sunshine, high temperatures (factors needed for the formation of smog) are available in the Arctic.

1669-028
The text has been updated.

1669-029
The text has been revised in Section III.C.1.

1669-030
Please refer to Section III.C.1.

1669-031
Please refer to Section III.C.1. Please also see Response 1669-030.

1669-032
Please refer to Section III.C.1.a. The change reflects this comment.

1669-033
Please see the changes in Section III.C.1.a.

1669-034
Please refer to Section III.C.4.a.

1669-035
Please see the changes in Section III.C.4.a.

1669-036
Section IV.A.6.b has been revised. Sacred sites identified too late to be considered in this IAP/EIS will be considered in future Federal actions.

1669-037
The statement appearing near the end of Section III.C.2 has been misinterpreted. The statement is intended to point out the value of both the North Slope Borough's Traditional Land Use Inventory and the cultural memory of the North Slope's Inupiat residents. Section III.C.2 has been modified.

1669-038
The cultural history of the NPR-A covers the review of traditional use. Land ownership of the village of Nuiqsut is outlined in this section and assumes its claims from ANCSA.

This information is in Appendix I.

1669-039
The label was not meant to indicate appropriate or inappropriate use of the land, only that the BLM has not issued authorizations. The revised title of Section III.C.5.a(2)(c) is "Structures."

1669-040
The next to the last sentence in the first paragraph of Section III.C.5.b(1) in the Draft IAP/EIS has been deleted.

The Coastal Zone Management Act, 16 U.S.C. § 1451-62, mandates a consistency determination from the State of Alaska for Federal activities "directly affecting the coastal zones." The NPR-A is not included in the coastal zone, 16 U.S.C. § 1453(1), but activities taking place there may "directly affect" it. It is BLM's responsibility to conduct or support those activities in a manner that is, to the maximum extent practical, consistent with approved State management programs.

1669-041
While we acknowledge the existence of the local land use plans, these local plans cannot control activities on Federal lands. Rezoning would not be required before a Federal lessee or permittee could proceed with activities in the NPR-A that have been authorized by BLM. Oil companies may choose (but are not required) to comply with the NSB's comprehensive plan in the NPR-A.

1669-042
The introduction to Section III.C.6 (Recreation and Visual) states that local use of recreation resources in the planning area is not addressed in that section because local use of those resources is deeply entrenched in a predominantly subsistence lifestyle. The introduction should have stated that hunting and fishing activities of local residents are not included in the discussion of recreation because those activities are so ingrained in the subsistence lifestyle that they are more appropriately covered in the subsistence section. However, local participation in the listed activities (e.g., winter activities) was considered. Changes in the text clarify this point.

1669-043
The BLM believes that North Slope residents, particularly the community of Nuiqsut, which uses the lands, waters, and animal resources associated with the NPR-A, would face disproportionate risks from NPR-A development. Direct adverse cultural and economic effects on U.S. residents outside of the North Slope would be limited. Please refer to Section IV.A.6.a.

1669-044
Table III.C.3-1 has been revised.

1669-045
Table III.C.3-4 has been revised.

1669-046
Table III.C.3-3 does not include Atqasuk because information on community participation was not available. Barrow and Nuiqsut, the two communities represented in the table, are referenced in Section III.C.3.b.

1669-047
Please see the footnote for Table III.C.3-4. Revision relating to Nuiqsut data 1994-1995 for small land mammals indicates: "Not harvested for food."

1669-048
The new title for Table III.C.3-4 is "Edible Pounds' Percentages of Specific Subsistence Resources." Please see revised Section III.C.3.b..

1669-049
Section III.C.3.b has been revised. Changes more accurately reflect Nuiqsut's bowhead whaling practices.

1669-050
Section III.C.4.b(1)(a) has been revised.

1669-051
The description (Sec. III.C.4.b(1)(c)) of the Barrow subsistence-use area for caribou has been changed. Using S.R. Braund and Associates and UAA, ISER (1993), the description more accurately reflects current subsistence caribou harvests. The newly described area is a boundary that circumscribes reported harvest points/sites, and it does not represent a reported harvest area.

1669-052
Section III.C.4.b(1)(d) has been revised.

1669-053
Please see the change in Section III.C.4.b(1)(d).

1669-054
Please see the change in Section III.C.4.b(1)(e).

1669-055
Please see the changes in Section III.C.4.b(1)(e).

1669-056
Please see the changes in Section III.C.4.b(1)(f).

1669-057
Please see the change in Section III.C.4.b(1)(g).

1669-058
Please see the change in Section III.C.4.b(1)(g).

1669-059
Please see the change in Section III.C.4.b(1)(g).

1669-060
Please see the changes in Section III.C.4.b(2).

1669-061
Please see the changes in Section III.C.4.b(2).

1669-062
Table III.C.3-1 has been revised.

1669-063
Figure III.C.3-6 includes the "lifetime" subsistence-harvest areas used by Atqasuk for hunting major subsistence species. The only data of this type that we are aware of were collected by Pedersen (1979). Newer harvest area data are in Figure III.C.3-19 (Opie, Brower, and Bates, 1997). These data represent only one harvest season.

1669-064
Please see the change in Section III.C.4.b(2)(a).

1669-065
Please see the change in Section III.C.4.b(2)(a).

1669-066
Please see the change in Section III.C.4.b(2)(a).

1669-067
Please see the change in Section III.C.4.b(2)(b).

1669-068
Please see the change in Section III.C.4.b(2)(b); "the only year of harvest data" has been deleted.

1669-069
Please see the change in Section III.C.4.b(2)(c).

1669-070
Please see the change in Sec. III.C.4.b(2)(c).

1669-071
Please see the change in Section III.C.4.b(3). Coastal and marine birds basically are the terms used to distinguish between shorebirds and seabirds. The text has been changed to "waterfowl and ptarmigan," as geese, ducks, and ptarmigan are the preferred birds for subsistence.

1669-072
Please see the change in Section III.C.4.b(3).

1669-073
Table III.C.3-10 is based on the latest data available (Opie, Brower, and Bates, 1997). We suspect the commenter means Figure III.C.3-10 and acknowledge that this figure is based on old (1979) data. The old data includes the extent of "lifetime" subsistence-use areas up to 1979. Figure III.C.3-1 represents the extent of subsistence use areas as described by Pedersen for the period 1973-1986 (Pedersen, In prep.). Figure III.C.3-15 describes harvest sites for the 1995-1995 harvest season (Brower and Opie, 1996). Figure III.C.3-10 will be updated to reflect use area data from Pedersen's 1973-1986 mapping effort.

1669-074
Table III.C.3-1 has been revised.

1669-075
Figure III.C.3-11 has been revised in response to comments 1669-071 and 079, NQ02-004 and NQ04-001. Seasonal harvest periods were updated from Impact Assessment, Inc.'s (1990) report *Subsistence Resource Harvest Patterns: Nuiqsut*. We are unaware of any more recent descriptions of Nuiqsut's annual subsistence

cycle.

1669-076
Please see the change in Section III.C.4.b(3)(a). In 1993, Nuiqsut had a successful whaling season.

1669-077

Please see Response 1669-075. Nuiqsut residents' statements (Sec. III.C.4.b(2)(b)) are about beluga whales. Beluga whales have been deleted from Figure III.C.3-11.

1669-078
Please see Section III.C.4.b(3)(c) for recent "sealing" information. This information has been substituted for the 1979 references.

1669-079
Please see the change in Section III.C.4.b(3)(d).

1669-080
Please see the change in Section III.C.4.b(3)(e).

1669-081

Please see the change in Section III.C.3.b(3)(f).

1669-082
Please see the change in Section III.C.3.b(3)(f).

1669-083
Please see the change in Section III.C.3.b(3)(f).

1669-084
Please see the change in Section III.C.3.b(3)(g).

1669-085
Please see the change in Section III.C.3.b(3)(g).

1669-086
Please see the change in Section III.C.3.b(3)(h). The heading "Marine and Coastal Birds" has been changed to "Waterfowl." Please see Response 1669-071.

1669-087
Please see the change in Section III.C.3.b(3)(h).

1669-088
Please see change in Section III.C.3.b(3)(h). The heading "Marine and Coastal Birds" has been changed to "Waterfowl." Please see Responses 1669-071 and 1669-086.

1669-089
Please see the change in Section III.C.3.b(3)(h).

1669-090
Please see the change in Section III.C.3.b(3)(h).

1669-091
Please see the change in Section III.C.3.b(3)(h).

1669-092
Please see the change in Section III.C.3.b(3)(i).

1669-093
Please see the change in Section III.C.3.b(3)(h).

1669-094
Please the change in Section III.C.3.b(3).

1669-095
The BLM checked the map labeling. The maps are in agreement with USGS topographic quadrangles from which BLM took the place names. All place names on these maps were approved by the Board of Geographic Names. If there is an error in the approved place names, the appropriate contact for correction is:

Executive Secretary
U.S. Board on Geographic Names
523 National Center
Reston, VA 20192

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March 12, 1998

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Re: Draft IAP/EIS
Northeast NPR-A Study Area

Gentlemen:

BLM has requested public comment on its Draft Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) for leasing in the northeast corner of the National Petroleum Reserve-Alaska (the "Study Area"). These comments are submitted on behalf of Kuukpik Corporation, the ANCSA Native village corporation for Nuiqsut.

As you know, Nuiqsut would be the community most impacted by any leasing in the Study Area. Kuukpik's shareholders and their families make up more than ninety-five percent of the population of Nuiqsut. Kuukpik is far and away the

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largest private surface landowner in the Study Area. Between land that Kuukpik now owns and what Kuukpik is still entitled to select, Kuukpik will own more than 70,000 acres in NPR-A that are within the Study Area and will be affected by the decisions in the Final IAP/EIS. The impact of actions taken pursuant to the IAP/EIS on Kuukpik and its shareholders goes far beyond impacts on lands owned by Kuukpik, however. The North Slope Borough planning document for the area, Nuiqsut Paisanich, finds that intensive subsistence use by the Nuiqsut community extends as far west as Teshekpuk Lake and that occasional use extends nearly 20 miles to the west of Teshekpuk Lake. (pp. 9, 30-32). The letter Kuukpik submitted to Mr. Tom Allen on March 26, 1997 during the scoping part of this process describes the Kuukpikmiut's[1] dependency on the Study Area lands in detail. A copy is attached (please note that we wish to reiterate the comments made in that letter).

Kuukpik is generally supportive of efforts to lease lands in the Study Area, subject to acceptable environmental and land use protections and Kuukpik's selection and conveyancing rights under ANCSA in the Kuukpik 11(a)(1) Withdrawal Area. Thus we read the Draft IAP/EIS with great disappointment. We cannot support leasing in the Study Area as the Draft IAP/EIS now stands. We find the Draft seriously flawed by a combination of factual inaccuracies, omissions, mistaken or unwarranted assumptions and just plain wrong-headed reasoning. Kuukpik believes that these problems must be corrected before any leasing can occur. Some of these deficiencies are specific to the Kuukpik 11(a)(1) Withdrawal Area and our remaining land selections, but many of them apply to the entire Study Area.

NONCOMPLIANCE WITH SECTION 810 OF ANILCA

Before commenting on specific problems with the Draft, however, it is Kuukpik's position that the process proposed by the Department for reaching its Record of Decision and proceeding with a lease sale is itself fundamentally flawed. I must express the frustration of my Board of Directors and of our people that our chief and perhaps last opportunity for public comment prior to a lease sale is not on a specific proposal but on five alternatives. The Draft states that no one of these alternatives reflects the likely final plan, but that the final plan will likely include 001

[1] "Kuukpikmiut is Inupiaq for "Kuukpik people."

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elements from a number of these alternatives.[2] The last two issues of the BLM-Alaska newsletter say that the final EIS will be issued in June and the Record of Decision published a month later in July. The Draft confirms roughly that timing.[3] Something fundamental is missing here. That something is an opportunity for our input on the actual plan itself.

001

Nuiqsut lies entirely within the Study Area. More than half of Kuukpik's land holdings will be within that Study Area. Our shareholders and their families use all of the study area for subsistence. Yet as we now understand the IAP/EIS procedure, we will not be afforded any time to review and comment on the actual plan that BLM prefers and ultimately recommends for adoption. At this point, it is anybody's guess as to what hodgepodge of elements from the different alternatives are going to be included in the final plan. That makes it more difficult to comment now. A proposal that may be acceptable in the complete package of one of the alternatives in the Draft may be completely unacceptable if it is joined with other options from other alternatives. It is the whole package of BLM's recommended final plan that is of most interest to people who live in and use the area every day, yet it appears that we will have little or no opportunity to comment on that whole package.

Due to this deficient process, BLM's proposed procedure is not in compliance with the specific statutory mandates of ANILCA. Section 810 of ANILCA requires the Department to make certain findings before any leasing can occur within NPR-A. Specifically:

> No ... lease, permit, or other use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be effected until the head of such federal agency:
>
> ...
>
> (3) determines that

[2] e.g., pp. I-8, II-19

[3] I-8.

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> (a) such a significant restriction of subsistence uses is necessary and consistent with sound management principles for the utilization of public lands;
>
> (b) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and
>
> (c) reasonable steps will be taken to minimize adverse effects upon subsistence uses and resources resulting from such actions.

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It is inconceivable that the Secretary can make a determination that these standards are met without first obtaining comments from the subsistence users (that this provision is intended to protect) on the actual proposal that is intended to be implemented. The input of these subsistence users is an essential part of this factual determination. The Department cannot assume that because a term was acceptable to these subsistence users in the context of one of these five alternatives that it therefore must be acceptable in any other context that the department chooses to construct. There are tradeoffs in the overall acceptability of any package of terms. Equally, cumulative impacts on particular resources or areas of concern to subsistence users will differ depending on the other items and provisions with which a particular term is joined.

Nowhere in the Draft's entire section on the process leading up to a lease sale is there any suggestion that the affected subsistence users will get any opportunity to comment or that that input will be part of the findings required by the Secretary as part of Section 810 of ANILCA.[4] To the contrary, the Draft's section on process specifically states that:

[4] I-8 to I-9 (Section I.B.5).

> The BLM anticipates that this IAP/EIS will fulfill the NEPA requirements for the first sale. Prior to conducting each additional sale, the agency will conduct a NEPA analysis tiering from the IAP/EIS. If the analysis in the IAP/EIS is deemed to be valid, the NEPA analysis for the second and subsequent sales may require only an administrative determination or an EA.[5]

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That language is not consistent with our being offered any opportunity to comment on BLM's actual proposal prior to the initial sale and only limited comment prior to any subsequent sales. Nor, on the existing schedule, has any time been allowed for such input. Secretary Babbitt has been quoted in the Anchorage Daily News as calling for leases to be offered in the Study Area in the summer of 1998.[6] The Draft itself calls for an actual lease sale in "late 1998." See I-8. No opportunity has been allowed for our input and comment on BLM's preferred alternative, on what is actually proposed to happen on our traditional lands.

Secretary Babbitt has been publicly quoted in the press as stating that "oil leasing is 'absolutely' the goal of an environmental study of the North Slope's National Petroleum Reserve."[7] Secretary Babbitt is quoted in the same article as stating:

> "I want to get out on the ground and I want to look at every square inch of NPR-A," Babbitt said. "My plans are to fly to Anchorage, change planes for Barrow, and then I want to

[5] I-8 to I-9

[6] 2/7/97 (Vol. LII, No. 38), p. 1.

[7] Anchorage Daily News, 2/7/97 (Vol LII, No. 38), p. 1. Contrast this statement with 40 CFR 1502.2(g): "Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency action, rather than justifying decisions already made."

> disappear into NPR-A for as much time as I need to understand every geological structure, every lake, every wildlife issue so that I will be fully prepared to be a meaningful participant in this process."[8]

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These are Secretary Babbitt's goals, which are in line with the requirements of Section 810 of ANILCA. The actual process adopted by the Alaska office of BLM, however, falls far short of both the Secretary's goals and the statutory mandate. That process denies the very subsistence users the Secretary is trying to protect the opportunity to review and comment on the BLM's preferred alternative and final recommendations.

Nor is BLM's approach in compliance with the applicable regulations, which state that:

> 1500.2 Policy
> Federal Agencies shall to the fullest extent possible
>
> ...
>
> (d) Encourage and facilitate public involvement in decisions which affect the quality of the human environment.[9]

It is hard to imagine a decision more likely than oil leasing to affect the human environment of a community almost entirely dependent on a subsistence economy. BLM's procedure falls far short of meeting this standard.

Kuukpik and its shareholders and their families can be forgiven for wondering what has happened to the statutory protections that were to be afforded to them by Section 810 of ANILCA. Kuukpik does not feel that the existing procedure

[8] Id.

[9] 40 CFR 1500.2.

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is in compliance with the Department's own regulations, either. From Kuukpik's standpoint and that of all its local subsistence users who will be impacted by the final plan, the "draft statement is so inadequate as to preclude meaningful analysis..."[10] We cannot see now and apparently are not going to be allowed to comment meaningfully on the final plan, the preferred alternative. The appropriate response in that situation, per the applicable regulations, is that "the agency shall prepare and circulate a revised draft of the appropriate portion."[11] 001

Kuukpik requests that a ninety day public comment period be provided for review and comment on BLM's preferred alternative prior to issuance of a final IAP/EIS or any Record of Decision. Meaningful public comment will otherwise be denied and the requirements of section 810 of ANILCA will go unmet.

NONCOMPLIANCE WITH FEDERAL LAND POLICY AND MANAGEMENT ACT

The Draft ignores or dismisses without analysis the local interests, even those that are protected by law. The Federal Land Policy and Management Act (FLPMA) requires the Secretary to keep apprised of State, local and tribal land use plans, and to assure that consideration is given to those plans.[12] Under FLPMA, any federal land use plan must be consistent with State and local plans, to the extent those plans are consistent with federal law. Nuiqsut Paisanich is such a plan, yet it has been ignored in the Draft and no heed has been paid to its policies. Nuiqsut Paisanich has been adopted as the guiding local land plan in the Study Area by all of the regional 002

[10] 40 CFR 1502.9(a).

[11] The entire text of the pertinent portion of 40 CFR 1502.9(a) is as follows:

> The draft statement must fulfill and satisfy to the fullest extent possible the requirements established for final statements in section 102(2)(C) of the Act. If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion.

[12] 43 U.S.C. §1712(c)(9).

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and local governmental entities. On July 7, 1995, by Resolution 95-05, the North Slope Borough Planning Commission adopted and endorsed Nuiqsut Paisanich as establishing "the guiding principles" for any oil and gas development in the area. On June 26, 1995, in a three way, joint resolution, the City of Nuiqsut, the Native Village of Nuiqsut and Kuukpik Corporation all adopted and endorsed Nuiqsut Paisanich, as well. 002

Far from considering and attempting to incorporate the "guiding principles" of Nuiqsut Paisanich, the Draft IAP/EIS mentions it only once in 750 pages.[13] Wholly aside from the failure to comply with federal statutory requirements, the message to the local people who are going to be most affected by the activity is that their concerns and local interest get short shrift. Kuukpik would prefer to see no leasing to leasing on those terms.

ARBITRARY AND CAPRICIOUS TREATMENT OF KUUKPIK'S DEFERRAL PROPOSAL

The deficiencies noted above are not isolated examples. Kuukpik stated unequivocally in the attached March 26, 1997 letter that we opposed any leasing within the Kuukpik Withdrawal Area until Kuukpik's land selections were completed. (3/26/97, p. 3) That is Kuukpik's position today, as well. That deferral proposal is mentioned in the Draft. However, it is addressed in such a cursory fashion, with conclusory statements that are rife with unfounded assumptions and mistaken facts, that an impartial decision by anyone not in possession of the true facts is virtually impossible. Only one of the four leasing alternatives even considers the possibility of deferring leasing in the Kuukpik Withdrawal Area until Kuukpik's statutory selections are completed. That is in Alternative B.[14]

BLM's discussion of this deferral option is incomplete, erroneous and prejudicial to Kuukpik. BLM never addresses the specific effects of protecting 003

[13] IV-C-54

[14] IV-C-1.

Kuukpik's selection rights. Instead, BLM simply assumes that deferral will preclude any development within Kuukpik's selection area.[15] As the draft states:

> Alternative B would not result in a viable field... because tracts offered for leasing would be too far from existing infrastructure (Alpine).[16]

Although BLM recognizes that federal lands may eventually be leased after Kuukpik makes its selections, it treats Kuukpik's selection rights as though they created a conservation area, and assumes that Kuukpik will create a "no lease zone" over its lands. BLM assumes that this would render any oil fields within NPR-A uneconomic, by isolating them from existing infrastructure. There are absolutely no factual grounds stated for this assumption.[17] In fact, these assumption are completely

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[15] IV-A-27 (Tables IV.A.1.b-4; IV.A.1.b-6 and accompanying Notes); IV-A-28; IV-C-34. With the exception of the text quoted below, these assumptions are not expressly stated, but are readily apparent from and implicit in the Draft's discussions of what size fields will and will not be commercial. These assumptions are all the more arbitrary and capricious for being unstated.

[16] IV-A-28.

[17] Perhaps BLM is concerned that Kuukpik's selections have not yet been made and that the process of making those selections may delay oil and gas activities to the west. That is nonsense. The delay, if any, is entirely within BLM's control. Kuukpik has recently met with BLM regarding the making of Kuukpik's remaining land selections and hopes to make those selections within a matter of months or a year, not many years. The village corporations for three other North Slope villages, Atkasuq, Kaktovik and Wainwright, have recently made or are in the process of making their selections. The bottleneck is at BLM. Kuukpik is still awaiting conveyances of nearly 16,000 acres of lands in NPR-A that it selected in 1974, nearly twenty-four years ago. It is not surprising that Kuukpik has not felt a great sense of urgency in making its remaining selections when BLM's conveyancing time is so lengthy. It would be the very height of effrontery and outrageousness, however, if BLM conveyancing delays are the reason for the Draft's assumption that Kuukpik's deferral proposal would create a no-development zone for many years. It would be an

erroneous. If BLM staff had bothered checking with Kuukpik or ASRC they would have known that Kuukpik has an agreement in place with ASRC that permits, on specified terms and with specified environmental protections, development of the subsurface underlying Kuukpik's lands in NPR-A. There is no analysis, as opposed to these baseless assumptions, anywhere in the Draft of what the effects of deferral of leasing in the Kuukpik Withdrawal Area would actually be.

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Based on the erroneous assumption that Kuukpik will prohibit leasing within its selections, BLM then concludes that deferral would render any oil fields within the Study Area or elsewhere in NPR-A uneconomic by isolating them from existing infrastructure.[18] The fact of Kuukpik's agreement with ASRC demonstrates

abuse of BLM's authority if BLM proposed to burden lands to be selected by Kuukpik, over Kuukpik's adamant opposition, in order to ensure that BLM's own conveyancing delays did not affect federal leasing revenues on adjacent lands. Other parts of the Draft lend some credence to that suspicion, however. As noted below, BLM's Alternatives C, D and E all propose to lease the 16,000 acres of Kuukpik selections which BLM has been processing already for nearly twenty-four years. We hope and trust that this was merely an oversight. Our conversations with top BLM officials recently have suggested a willingness to try to expedite our conveyances of both selected and to be selected lands. If BLM conveyancing delays were indeed the basis for BLM's assumptions, they are both outrageous and unwarranted. The cure lies in BLM's hands, and the consequences of delays in BLM's conveyancing process should not be visited on Kuukpik. Revisions to the Draft need to fully set forth BLM's analysis, fairly present Kuukpik's proposal and give Kuukpik and ASRC the economic self-determination and control of their lands contemplated by ANCSA. BLM also needs to bear in mind that the widely accepted time frame for oil and gas development in Alaska, from leasing to production, is ten years. Ten years is plenty of time for Kuukpik's selections and conveyances and for leasing and exploration of ASRC's underlying subsurface. If this is the basis of BLM's assumptions, they are both improper and wrong.

[18] IV-A-27 (Tables IV.A.1.b-4; IV.A.1.b-6 and accompanying Notes); IV-C-34. Even in the absence of the agreement with ASRC, BLM's assumptions and the logic constructed upon them are in error. The Draft fails to note that Kuukpik-owned lands already lie between the Alpine field and the Study Area. If BLM proposes to lease current and future Kuukpik selections, over the objections of Kuukpik and ASRC, in

that Kuukpik's lands and lands covered by future selections are not "no development zones" and that protection of Kuukpik's selection rights should no more be treated as a bar to potential development than would any other ownership. BLM's assumptions arbitrarily and without basis inform the reader (and ultimately the decisionmakers) that they must choose between protecting Native land selection rights and any oil and gas development in the Study Area. This will prejudice readers against Kuukpik, by misstating Kuukpik's position and the merits of guarding Kuukpik's land entitlements.[19]

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The prejudice from BLM's approach goes beyond unfounded assumptions. BLM's whole presentation of the request to defer leasing is made in a context that seems designed to discourage adopting that proposal. BLM has grouped Kuukpik's selection rights in Alternative B with an assortment of unrelated conservation measures, including designating the Colville as a "Wild" river, establishment of a bird conservation area, and withholding other large portions of the planning area from leasing. This random combination of unrelated options, many of them fairly extreme measures or steps requiring Congressional approval, prevents any meaningful analysis of the effect of deferring leasing. The Draft only presents the combined effects of all of the options under Alternative B. It is therefore impossible to tell what the specific effects of respecting Kuukpik's selection rights might be. By lumping deferral with the most restrictive environmental conditions, BLM unfairly presents Kuukpik's selection rights as a bar to development. In view of Secretary

order to avoid BLM conveyancing delays, BLM has neglected to consider these previously conveyed lands. Crossing Kuukpik lands to access Alpine is already a precondition of any development in the Study Area, even if the Department could lease currently selected but not yet conveyed lands, let alone those lands not yet selected by Kuukpik. The preferable and more logical approach is to expedite the conveyances.

[19] Contrast the BLM unfounded and prejudicial assumptions implicit in the Draft's treatment of Kuukpik's deferral proposal with 40 CFR 1502.2(g): "Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency action, rather than justifying decisions already made." The shortfall between the regulatory requirements and the Draft is glaring.

Babbitt's statement that leasing is "absolutely" the goal of the entire process,[20] grouping Kuukpik's deferral proposal with these likely non-starters suggests an unfair and uninformed predisposition against Kuukpik's proposal.

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Moreover, the Draft fails to discuss the benefits of protecting Kuukpik's and ASRC's entitlements through the deferral proposal. NEPA requires BLM to present the reasonably foreseeable effects of each alternative, so that the reviewer may weigh its comparative merits.[21] The Draft fails to present these effects, by treating Kuukpik's selection rights as only an obstacle to leasing and development, without considering the benefits of preserving those rights. Yet ANCSA very clearly states a policy of promoting economic self-determination for Natives,[22] a policy which Kuukpik's and ASRC's proposal advances and Alternatives C, D and E would defeat.

By law, BLM must consider the advantages of local management of development and subsistence resources. By creating Native corporations under ANCSA and vesting them with ownership rights to traditional lands and lands for economic development, Congress granted Alaska Natives the right to manage and control their own traditional lands and additional lands for economic development. This right would be utterly defeated if BLM encumbers Kuukpik's existing and future selections with oil and gas leases. In addition to serving ANCSA's goal of self-determination, preserving Kuukpik's selection rights unencumbered will allow us to apply our own experience to obtain environmental and subsistence protections potentially superior to those suggested by the Draft. A fair and complete analysis of the merits of Kuukpik's and ASRC's proposal to defer leasing until our selections are made must consider the relative merits of BLM versus local management of our lands and resources, rather than simplistically equating Kuukpik control with no development. Without a full analysis, the IAP/EIS is incomplete and defective as a matter of law.

The Draft's "analysis" and conclusions are based on erroneous and inaccurate assumptions which arbitrarily and capriciously prejudice any decision maker

[20] Anchorage Daily News, 2/7/97 (Vol LII, No. 38), p. 1.

[21] 40 C.F.R. §1502.14(b).

[22] e.g., 43 U.S.C. 1601(b).

against protecting Kuukpik's rights. Kuukpik requests that these erroneous and unwarranted assumptions be stricken and that Kuukpik's deferral proposal be fully and fairly analyzed and adopted. 003

KUUKPIK LAND SELECTIONS

As must be apparent from our letter of March 26, 1997 (attached) and our discussion thus far, one of Kuukpik's greatest concerns is Kuukpik's remaining ANCSA land selection entitlements. The overall lack of discussion in the Draft of the issues raised by our remaining land selection rights is fundamentally unsettling. The errors and omissions in what discussion the Draft does contain are disturbing and need to be corrected. BLM must reconsider its analysis of our selection rights to ensure that our traditional lands are protected and must present and discuss our interests fairly in the Draft and in the Final IAP/EIS. BLM has assured Kuukpik that the federal government's desire for oil royalties will not affect the promises it made to Alaska Natives under ANCSA. Those promises and the statutory mandates and policies of ANCSA must be implemented, allowing Kuukpik and ASRC the right to decide the terms on which any leasing of Native lands occurs.

It is particularly troubling that in Alternatives C, D and E, BLM apparently intends to lease lands which Kuukpik and ASRC have already selected.[23] This is outrageous. Kuukpik selected these lands nearly twenty-four years ago. The fact that they are not yet conveyed to Kuukpik and to ASRC is no fault of Kuukpik's. It is rather a function of BLM's conveyancing backlog, a backlog which Kuukpik has endured very patiently. This approach punishes Kuukpik for BLM's own failure to process our selections. 004

There can be no justification for treating these lands as though they are available for federal leasing. Kuukpik is underselected by over 22,000 acres even after taking these existing selections into account. There is no doubt that Kuukpik will receive title to the surface of these lands and that ASRC will receive title to the subsurface. For BLM to ignore the wishes of the future owners of these lands and propose to lease them over the opposition of both Kuukpik and ASRC is contrary to 005

[23] II-23, 24, and 25 (Figures II.C.1-3, II.C.1-4, II.C.1-5).

both ANCSA and ANILCA.[24] This approach cuts directly against one of the fundamental goals of ANCSA, the goal of economic self-determination for Natives. It is for Kuukpik and ASRC to determine when and under what terms these lands should be leased. 005

There are numerous other errors in the Draft's cursory treatment of Kuukpik's selection rights. Kuukpik has over 22,000 acres of entitlement remaining in the Study Area, though the Draft only recognizes a 13,000 acre entitlement.[25] The fact that the draft did not even get the correct acreage to which Kuukpik is entitled is a measure of just how rushed the entire process of preparing the Draft was. The Draft also erroneously concluded that Kuukpik's selections could not reach the most southwest township in the Kuukpik Withdrawal Area, so the deferral option in Alternative B did not include that Township.[26] With over 22,000 acres of entitlements, Kuukpik's selections may well reach into that Township. That error needs to be corrected. Kuukpik has expressed many times our paramount interest in protecting our remaining land selections, and these types of mistakes are far from reassuring.

The revenue sharing provisions of Section 7(i) of ANCSA give all Alaska Natives, Kuukpik and its shareholders included, a direct financial stake in whether BLM attempts to offer lands subject to Kuukpik's selections for lease over Kuukpik's and ASRC's objections. As an alternative to protecting Kuukpik's land entitlements, BLM offers to escrow any lease royalties pending selection.[27] This will not adequately protect the rights of either Kuukpik or the Natives of Alaska. While proposing to escrow any royalties on lands which may be conveyed to Kuukpik and

[24] It is possible that this is simply an oversight on BLM's part in preparing the Draft and that there is no intent to actually lease currently selected lands. If that is indeed the case, it is more palatable than a deliberate intention to lease over our opposition. At the same time, however, it would be yet one more instance of the many errors in the Draft.

[25] II-3.

[26] II-16 (Figure II.B.13.

[27] P. IV-F-20.

ASRC, BLM also acknowledges that fifty percent of these royalties must be paid to the State of Alaska. There is no discussion of whether these royalties will ever be recovered, or if Natives will be left with only half of the royalties for their lands. In addition, the escrow is limited to royalties, without considering lease bonuses, surface rents, or other consideration which would otherwise be paid to the Native corporations. This permits the federal and state government to appropriate funds which are rightly owed to Natives. If Kuukpik is permitted to complete its selections before leasing, these funds would benefit not only Kuukpik directly, its shareholder and all ASRC shareholders, but all Alaska Natives, through the revenue sharing requirements of section 7(i) of ANCSA. 005

Even if the United States is willing to escrow all consideration on behalf of Natives, that escrow still would not preserve the rights granted us under ANCSA. Congress entrusted Alaska Natives with the right to protect our own interests, and we have proved capable of doing so. We should be allowed to do the same for our future selections. The Draft assumes that the federal leases could simply be assigned to the Native corporations, but how will the rights granted to the government be passed on to private land owners, especially where the ownership of the surface and subsurface will be divided between Kuukpik and ASRC? The federal government needs to draw a very clear line between its interests as a landowner and its administrative functions as an impartial arbiter of Kuukpik's and ASRC's rights under ANCSA. The Draft focuses almost exclusively on what is good or bad for the federal government as a landowner, without properly separating and evaluating BLM's statutory and administrative obligations to Kuukpik and ASRC.

LOCAL COMMENTS IGNORED

Kuukpik's concerns over preserving our right to manage our own lands and to keep them unencumbered by federal leases are increased by BLM's refusal to seriously consider the comments of Kuukpik, its shareholders and their families on the proposed leasing. We have repeatedly objected to the accelerated public comment period for this IAP/EIS, because the unique environmental and subsistence issues in the area require careful consideration, which cannot be addressed in a few public hearings. We have still tried to make our views known within the expedited comment period, but the Draft shows that the public comment schedule did not provide BLM with enough time to integrate the information and knowledge of local residents into the process. 006

In taking the time to attend public comment meetings and meet with the BLM, the Native residents of Nuiqsut hoped to contribute to the IAP/EIS process, by providing their unique knowledge and views, which would then be integrated into BLM's analysis. Instead, the Draft dedicates two pages to describing Native concerns, which are then summarily dismissed.[29] Instead of incorporating these comments into its analysis, BLM condenses our concerns into a laundry list of twenty-one issues, which it quickly dismisses by stating that the concerns will be addressed by effective stipulations and the establishment of a Subsistence Advisory Panel.[30] It does not bother to discuss how these concerns will be addressed by those stipulations, nor does it even identify which stipulations will address those concerns. The concerns listed range from damage to traditional sites to the failure to integrate the testimony of Nuiqsut residents, and it is impossible to determine from the Draft how BLM decided that the stipulations would resolve these issues. 006

For example, while one listed concern discussed compensation for damage to traditional sites from seismic activity, the BLM has refused to include any provisions regarding compensation, despite the recommendations of the Subsistence Impacts Panel.[31] Despite this refusal, the BLM still claims that this concern is already addressed by the stipulations.[31] It is even more difficult to see why the BLM believes that the stipulations address Nuiqsut residents' concerns over the fast-track schedule and failure to integrate local concerns such as those presented by Nuiqsut Paisanich and those stated in Kuukpik's letters of March 26, 1997 and January 9, 1998. The people of Nuiqsut deserve more respect than this simple dismissal of their concerns.

The rest of the EIS displays the same disregard for local views. Even where local residents have taken the time to present a detailed discussion of our interests and observations, the Draft has ignored or summarily discounted those views. 007

[29] pp. IV-C-54, 55.

[29] pp. IV-C-55, 56.

[30] F-13 to 14; II-40.

[31] IV-C-56.

Native views and traditional knowledge reflect many lifetimes of experience with the land, wildlife and local conditions. The Native observations and experience have been hard won, since our very lives and those of our ancestors for many generations have depended on a close and accurate observation and experience of our environment and the wildlife on which we depend. Where local experience conflicts with commissioned studies, the Draft simply assumes that the Natives are wrong, with statements such as the following: "Traditional Inupiat testimony often does not agree with the conclusions of Western science..."[32] 007

BLM's treatment of caribou movement demonstrates this disregard for Native knowledge. For years, the people of Nuiqsut have insisted that pipelines must be elevated, to ensure that caribou will remain free to pass underneath. Although the government has required an elevation of only five feet, our indigenous experience has shown that this is not always enough. As indicated by the testimony of Isaac Nukapigak, when snow drifts underneath the pipelines, caribou cannot pass underneath and their movement is blocked.[33] Instead of considering this first-hand information, the BLM relied on a panel of government experts, who advised that "there are no data to suggest that caribou benefit from having the pipeline six feet high or higher."[34] Apparently Native testimony does not qualify as "data." BLM dismissed Mr. Nukapigak's testimony by stating "such an effect is expected to be temporary, with the caribou moving across the corridors when vehicle traffic has passed."[35] I do not see how this relates to blockage by snow drifting, and BLM does not support this conclusion with any reported study. Western science consists of temporary observations, while our knowledge is based on years of experience and constant contact with our environment. I see no basis for BLM to prefer one to the exclusion of the other. It is the scientists who are the short-timers here, with limited experience and observations. 008

[32] IV-C-48.

[33] IV-C-27.

[34] Appx. E-18.

[35] IV-C-27.

The people of Nuiqsut have insisted on local monitoring and management of subsistence resources. The subsistence task force recommended that local interests be represented by a subsistence panel, with the power to monitor, report, and resolve disputes involving subsistence.[36] BLM has watered down this concept into an excuse for relying on an incomplete analysis. Instead of considering our comments now, BLM has relied on the panel to justify a "wait and see" approach to management. In other words, no objection of ours to the stipulations can have much weight now, because BLM can always change them if they turn out not to work. Therefore, BLM can avoid actually responding to our concerns by deferring any action to a later date. 009

This approach will not protect subsistence interests. The resources of the North Slope are too sensitive to tolerate this sort of experimentation with stipulations. By the time we discover a defect in the stipulations, the ecology may have already been permanently harmed. Our livelihoods depend on preserving subsistence resources and access, and we cannot afford not to get the protections right the first time. We should also have the opportunity to see what is proposed, not simply be told that we will find out about it in the future. Even if we do identify a mistake or conflict, the subsistence advisory panel provides only an illusion of protection. Unlike the panel suggested by local residents and the task force, the subsistence panel is a purely advisory body, with only the authority to make recommendations. As is made clear by the draft stipulations, BLM retains the final power to ignore those recommendations. Despite the announced commitment to include local Natives in the decisionmaking process, the stipulations require BLM to consult with State and Federal agencies, not local Natives, in granting permits and exceptions. With only an advisory role in the planning process, our people cannot trust BLM to make up effective land use policy as it goes along. The interests at stake require comprehensive planning, not incremental decisions.

The recommendations for a subsistence panel contained in Appendix F should be adopted, not gutted as the Draft would do.

[36] Appx. F-10.

DEFICIENCIES IN IMPACTS ANALYSIS AND TIMING

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BLM has taken the same shorthand approach in its impacts analysis. To avoid a detailed analysis of each separate land use decision, the Draft groups several unrelated options into alternatives, stating that a final decision may incorporate options from one or more of the suggested alternatives.[37] This "mix and match" approach hides the impact of any single action. Without a specific description of the impacts of each option, it is impossible to calculate the impacts of a final action composed of several different options. All we have is the analysis of the total impact of the options, and we are left to guess how much each individual option contributes to the impact of the alternative. Even where BLM discusses impacts, it does not provide enough information. For example, to avoid a detailed analysis of the impacts on the communities of Nuiqsut, Barrow, and Atqasuk, the Draft refers readers to the Final EIS for Oil and Gas Lease Sale 170, a document which has not even been published yet![38]

011

BLM's cumulative impacts analysis is still more confusing. We have repeatedly insisted that BLM pay special attention to cumulative impacts. In response BLM has addressed a separate "cumulative case." This case assumes that all of the lands within the planning area have been leased, as in Alternative E.[39] Therefore, it assesses the cumulative impacts of full oil and gas leasing, but does not address the impacts from the more restrictive alternatives. It does not address what the cumulative impacts of Alternatives A-D might be. We know that full oil and gas leasing may have serious cumulative impacts, but how would those impacts differ under the other alternatives? The analysis for each of those alternatives is incomplete if it does not include cumulative impacts as well as direct effects. We cannot rely on an incomplete analysis to make such important land use decisions. BLM must take the time needed to present the full impact, including cumulative impacts, for each separate option, if the EIS is to provide any useful guidance.

[37] II-19.

[38] IV-C-51.

[39] IV-C-5.

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BLM's analysis of subsistence under ANILCA is even more incomplete. At Appendix D, BLM sets out the statutory requirements of Section 810 of ANILCA (also set forth in part above). Even though these statutory requirements are set forth in the Draft, the Draft does not make any of the findings required by Section 810.[40] BLM only made the preliminary determination of whether an alternative would significantly restrict subsistence uses. Where it found a significant restriction, however, it did not proceed to make the findings required by section 810(a). Without these findings, we do not know whether Alternatives D and E are even legal. This omission also deprives us of the ability to comment on these findings once they are finally made.

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The ANILCA analysis is further complicated by the assortment of alternatives. Each leasing alternative includes a first sale and multiple sale scenario. Which scenarios do the ANILCA findings consider? It is also unclear whether the ANILCA analysis considers cumulative impacts, because the cumulative case is not addressed in the ANILCA findings. These findings are useless if the review of Alternatives A through D does not consider cumulative impacts. The ANILCA findings must be complete, as required by Section 810, and must also clarify what options are being reviewed and what impacts are being considered. These findings will be valid only if they consider all of the potential impacts.

014

Finally, BLM has avoided some of the most controversial issues by artificially limiting the scope of the IAP/EIS to the narrow question of leasing, without considering other reasonable alternatives. As previously mentioned before, the alternative of deferring leasing until ANCSA lands are conveyed to Kuukpik and ASRC was not fully considered. The same is true for ASRC's proposal to exchange lands, which, contrary to the Draft, has already been presented in detail to the federal government.[41] Similarly, two of the recommendations by the task force panel, relating to compensation for subsistence damage and local hiring and training, were also dismissed, without explanation, as beyond BLM's legal authority.[42] NEPA

[40] Appx. D-5, 6.

[41] II-39.

[42] II-40.

requires BLM to give full consideration to all reasonable alternatives.[43] If BLM refuses to consider an alternative, it must provide some explanation for that decision, not a simple refutal.[44] Inclusion of land trade alternatives would provide a complete scope of alternatives, which would permit the Secretary to make an informed decision. 014

BLM must reopen the IAP/EIS drafting and comment process to permit consideration of these alternatives and interests. There has been extensive media attention paid to the tight time frame on which this entire process has been placed. Secretary Babbitt has stated "There is no time to spare."[45] However, this IAP/EIS process is not and should not be a race against time. The idea is presumably to get meaningful comments from the public and interested parties, not to give them so much information and so much erroneous, unfounded or incomplete information that the final preferred alternative essentially escapes review. Kuukpik is not suggesting that these are planned consequences of the tight time table and the rush to completion, but we are stating that they are actual consequences of this rush to leasing.

The idea must be to do it right and to provide for meaningful public review and comment. That is precisely what is now lacking. The Inupiat culture highly values consensus, which necessarily requires some time for discussion among our people after we understand what is actually being proposed, not a welter of options, none of which reflects the final preferred alternative. I do not think our culture is so different from any other culture facing similar proposals that would impose such major changes on the community.

BUFFERS AND DIRECTIONAL DRILLING

With advances in modern drilling technology, oil and gas underlying sensitive areas can be accessed from outside of those areas. Kuukpik believes that lands within three miles of Fish Creek, the Colville River and various nesting areas can be leased, subject to strict lease stipulations that there be no permanent surface structures in those areas and only very limited and temporary surface access. 015

[43] 40 CFR § 1502.14(a).

[44] 40 CFR § 1502.14(a).

[45] Anchorage Daily News, 2/5/97 Section B, p.1.

Kuukpik also believes, however, that we must see the whole package of BLM's preferred alternative to make meaningful comments on specific areas and issues.

CONCLUSION

Until the deficiencies discussed above are corrected, Kuukpik must strenuously oppose any federal leasing in the Study Area. We are asking that our rights be respected and that the job of preparing for and placing conditions on leasing be done right.

We would be happy to answer and further questions or to discuss these issues further.

Sincerely yours,

KUUKPIK CORPORATION

By

Joe Nukapigak
President

cc: Mayor Ben Nageak, North Slope Borough
The Honorable Bruce Babbitt
The Honorable Ted Stevens
The Honorable Frank Murkowski
The Honorable Don Young
Ms. Deborah Williams
Arctic Slope Regional Corporation
Mr. Jacob Adams
City of Nuiqsut
Native Village of Nuiqsut

March 26, 1997

FAX 271-4596

Mr. Tom Allen
State Director
Bureau of Land Management
222 West Seventh Avenue #13
Anchorage, Alaska 99513

Re: Proposed Federal Lease Sale in NPR-A

Dear Mr. Allen:

As you are probably aware, Kuukpik Corporation is the ANCSA village corporation for Nuiqsut and the Colville Delta. The Department of the Interior has asked for comments on proposals to offer oil and gas leases in the northeast corner of NPR-A.

First, I want to tell you a few facts about Kuukpik and the impacts of this proposal on Kuukpik, its present and future shareholders and the Inupiat people. The study area includes the City of Nuiqsut itself and roughly 40,000 acres of Kuukpik lands. In addition to lands already owned or selected by Kuukpik, the study area also includes extensive federal lands traditionally used by Kuukpik shareholders and Nuiqsut residents for subsistence. It also includes lands used by Inupiats from other North Slope villages for subsistence. The most intensive and extensive use of the study area is by the community of Nuiqsut, which Kuukpik represents. More than 95 percent of the residents of Nuiqsut are Kuukpik shareholders, are the children of shareholders (who will themselves become shareholders by inheritance or by the issuance of stock to Natives born after 1971), or are married to shareholders.

Kuukpik's concerns extend beyond lands it currently owns or has selected. Due to the huge areas required for subsistence in the Arctic environment, the Inupiat villages have all traditionally used more land for subsistence than the ANCSA settlement grants to them. The lands traditionally used by Nuiqsut residents for subsistence extend far beyond the lands to which Kuukpik is entitled under ANCSA, or even Kuukpik's

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entire ANCSA Withdrawal Area. The planning document formally adopted by the North Slope Borough, the City of Nuiqsut, the Native Village of Nuiqsut and Kuukpik Corporation as establishing "the guiding principles" for any oil and gas development near Nuiqsut examined the geographic scope of Nuiqsut's subsistence uses. That planning document, Nuiqsut Paisanich, A Cultural Plan, finds that intensive subsistence use by the Nuiqsut community extends as far west as Teshekpuk Lake and that occasional use extends nearly 20 miles to the west of Teshekpuk Lake. (pp. 9, 30-32). Nuiqsut Paisanich also recognizes the heavy dependency of Nuiqsut on these lands, stating that:

> Today, as in the past, subsistence harvest of wild resources is the central occupation of traditionalist Inupiat. Most of the people in Nuiqsut and other northern Alaska villages are traditionalists. Despite their acceptance of many elements of Euro-American culture, technology and economy, these people continue to participate in and depend on the subsistence way of life, either as hunters or as sponsors and sharers of the hunt. Subsistence provides such necessities as food and clothing, and it organizes the people's lives seasonally, socially, and ceremonially in the defining patterns of their culture. (p. 24)

In a study from a few years ago, Nuiqsut had the highest per capita consumption of game of any village on the North Slope, over 300 pounds per year. These are the lands and the local uses of those lands which oil and gas leasing threatens.

For all of these reasons, the proposed oil and gas lease sale within the study area is of critical importance to Kuukpik and the Nuiqsut community and to Inupiats from other North Slope villages. The proposed lease sale is of even greater importance to Kuukpik because it includes the very lands from which Kuukpik must complete its ANCSA land selections. According to BLM figures, Kuukpik is entitled to select an additional 13,121 acres within NPR-A. Kuukpik hopes that that figure will eventually be even higher, since Kuukpik has so far received smaller allocations of 12(b) acreage from ASRC than most of the other North Slope village corporations. Kuukpik still hopes to be allocated some of the remaining 12(b) acreage that ASRC must allocate among the village corporations in its region.

Kuukpik does not wish its remaining land selections to be burdened or complicated by previously-entered federal oil and gas leases. Kuukpik's land selections have historically been made to protect subsistence resources and habitat critical to the

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lifestyle of the Native people of the Colville Delta. Arctic Slope Regional Corporation, another Inupiat organization, will presumably acquire the subsurface under Kuukpik's lands. It is for these two Inupiat organizations to establish the necessary protections if any oil and gas development is to occur. Kuukpik and ASRC have been working on a set of protective measures. Kuukpik wants contractual rights over where, when and how development occurs on Kuukpik's own lands. Kuukpik, ASRC and oil companies interested in Kuukpik's other lands have made great progress toward agreement on such contractual protections. The proposed federal leases can only complicate the reaching of these goals, which are intended to protect Inupiat lands and the Inupiat culture. Therefore, Kuukpik opposes any federal leasing within Kuukpik's ANCSA 11(a)(1) Withdrawal Area in NPR-A until Kuukpik has completed its selections and until Kuukpik and ASRC have received all of their conveyances. Kuukpik will comment separately on leasing outside its ANCSA Withdrawal Area.

The land, its resources and the subsistence harvest of those resources are an essential part of the Inupiat culture. Protecting the land and its resources is part of protecting the Inupiat culture. The ANCSA settlement entitles Kuukpik to only a portion of the ancestral lands of the Kuukpikmiut. Kuukpik has only the status of an interested party as to much of its homelands. As to the lands which Kuukpik will obtain under the ANCSA settlement, however, the status of any development should be determined by Inupiats whose homelands they are and whose culture is dependent upon them. These are Inupiat issues on land that will belong to the Inupiat people. They should be left for the Inupiats to resolve.

Kuukpik's position should be respected for all three reasons. However, there are additional reasons that leasing should not occur over Kuukpik's opposition. Leasing within Kuukpik's Withdrawal Area over Kuukpik Corporation opposition would be contrary to existing federal and local laws, policies and findings. Under ANCSA, Congress mandated that the federal government not devalue the land that Native corporations were to receive by creating further interests in it. When Congress enacted ANCSA in 1971, it promised land as consideration for the settlement of the Alaska Natives' claims. Section 11 of ANCSA set aside specific lands for the Natives, by withdrawing them from all forms of appropriation, to ensure that the Native entitlements would not be devalued by any further disposal or encumbrances, including mineral leases. By authorizing this broad withdrawal, Congress recognized the unfairness of giving away interests in lands that had been promised to Natives under ANCSA, and announced that no other purpose, including mineral development, was more important than giving the Alaska Natives the land they deserved.

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Unfortunately, ANCSA set overly optimistic deadlines, and unexpected circumstances resulted in Kuukpik (and other Native corporations) selecting less than their full entitlement during the withdrawal period. Although the withdrawal expired, Kuukpik's entitlement remained. In 1981, the United States reaffirmed its obligation to the natives in Section 1410 of ANILCA, which added Section 22(j) to ANCSA. This provision gave the Secretary the needed authority to fulfill the United States' promise to the Natives, by revoking land to permit the Natives to complete their selections.

Section 22(j)(2) is intended to fulfill an agreement made in 1971. To that end, the statute requires the Secretary to withdraw the same lands previously made available, and which were promised to the Natives, in 1971. When it passed Section 1410, Congress affirmed that fulfilling its obligations under ANCSA remained of utmost importance, and directed the Secretary to give that goal the priority it deserved:

> The Secretary is to make every effort to withdraw available land for underselected villages from the original village and deficiency withdrawals. Lands considered available for revoking land would include all lands within those withdrawals which was [sic] considered public land and available for withdrawal at the time the ANCSA was passed in 1971, irrespective of the classification of the land subsequent to the passage of the ANCSA.

S.Rep. No. 413, 96th Cong. 2d Sess. 313 (1980), reprinted in 1980 U.S.C.C.A.N. 5070, 5257. Entering oil and gas leases creating new interests in lands which Kuukpik (and in effect ASRC) might select is directly contrary to this Congressional mandate. In Section 22(j) of ANCSA, Congress acknowledged that it will abide by the original rule that no further rights would be created in lands subject to Native corporation selection at least until those selections were completed and the conveyances made. For the Secretary to follow Congress' command, he must use his authority to protect the value of Kuukpik's entitlement, to make the lands available in the same condition and under the same terms as when they were promised in 1971. Any other course would result in Kuukpik receiving less than the full benefits which it was promised under ANCSA. As to subsurface under Kuukpik's lands that may be acquired by ASRC, ASRC may well (and as we understand it, does) share Kuukpik's desire to directly negotiate itself the terms of any development of those lands.

These are Kuukpik's ancestral lands. Determining what uses will be made of the Kuukpikmiut's homelands and negotiating the terms of any use directly is Kuukpik's job, not the federal government's. It is Kuukpik and its present and future shareholders who will be affected on a daily basis by any oil and gas development. Any federal leasing efforts in the Withdrawal Area only interfere with Kuukpik's efforts to ensure local input and self-determination.

Congress, the North Slope Borough, the City of Nuiqsut and the Native Village of Nuiqsut have all recognized the importance of local control over development, a goal which is flatly inconsistent with any proposed federal leasing in Kuukpik's Withdrawal Area prior to the completion of all of Kuukpik's selections and conveyances. In addition to the withdrawal policy expressed in ANCSA and ANILCA as discussed above, Congress has also expressed a strong policy that oil and gas development should not occur at all under village corporation lands in NPR-A unless the village corporation agrees that it should. In Section 143(6) of ANILCA, Congress stated that ASRC was not to acquire any mineral interests under village corporation lands in NPR-A without the concurrence of the village corporation. Even though that provision does not technically apply here, the Department can and should heed the underlying policy which Congress has endorsed and ensure that Kuukpik's remaining land selections are conveyed to it and its shareholders free of any leases.

Congress is not the only governing body that has endorsed that policy. The North Slope Borough, the City of Nuiqsut and the Native Village of Nuiqsut have all adopted and endorsed Nuiqsut Paisanich, a planning document that calls for maximizing the control of the community of Nuiqsut over whether and how any oil and gas development occurs near Nuiqsut. On July 7, 1995, by Resolution 95-05 the North Slope Borough Planning Commission adopted and endorsed Nuiqsut Paisanich, A Cultural Plan as establishing "the guiding principles" for any oil and gas development near Nuiqsut. On June 26, 1995, in a three way, joint resolution, the City of Nuiqsut, the Native Village of Nuiqsut and Kuukpik Corporation all adopted and endorsed Nuiqsut Paisanich, stating:

> Nuiqsut Paisanich, A Cultural Plan, is adopted in whole and is representative of the common goal(s) of local control and self-determination, the protection of the land and water and subsistence resources, mitigation of the negative impact(s) which occur as a result of oil and gas development, and the maximization of economic benefits and employment opportunities for the Kuukpikmiut today and into the future...

One of the stated goals of Nuiqsut Paisanich, endorsed by the North Slope Borough, the City of Nuiqsut and the Native Village of Nuiqsut, is that:

> The village should set high standards of protection for its own land and resource uses. These standards should complement federal and state laws and guidelines within an enlightened regional management system... To the extent possible, the village should be its own regulator and enforcer, with assistance from the borough's public safety office when required. (p. 53)

This is exactly what Kuukpik has been doing in negotiating contractually enforceable environmental standards and protections with oil companies on Kuukpik's other lands. ASRC, the other affected Inupiat landowner, has been in agreement for several years now that Kuukpik negotiate and contract for these protections directly with the oil companies.

Kuukpik's position on environmental protections and direct contractual rights to enforce those protections has also been endorsed by the local community. The City of Nuiqsut and the Native Village of Nuiqsut, by the Joint Resolution of June 26, 1995, declared that Kuukpik's positions:

> [R]egarding the exploration, development and production of oil and gas resources from lands in and on the Colville River Delta and NPR-A reflect the goals stated herein and are representative of the shared and common interests of all the parties and therefore, have the full declaratory support of the signators to this joint resolution on behalf of their respective organizations.

For the federal government to convey its remaining selections to Kuukpik with pre-existing federal leases would be directly contrary to the positions and policies unanimously adopted by Congress, the North Slope Borough and the local community.

ANILCA also requires the federal government to strongly weigh subsistence uses in determining whether any leases of federal lands will occur. Section 3120 of ANILCA states that no action will be taken which would significantly restrict subsistence uses unless certain findings can be made. All of those findings involve the use of public lands, whereas here the whole point is that these lands are going to cease

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to be public lands and become Kuukpik's. The federal government should not dispose of interests in what are going to be Kuukpik's lands over Kuukpik's objections.

Nor can any lease meet the standards imposed under Section 3120(a)(3). Since Kuukpik is going to acquire these lands and the federal government is not going to retain any interest, a lease is not "necessary." Nor can it be said that the "minimal amount" of lands is involved when the federal government would be leasing lands that are not even going to belong to the federal government.

Kuukpik's wishes and the policies adopted by Congress, the North Slope Borough, the City of Nuiqsut and the Native Village should be respected. No leasing should occur with Kuukpik's Withdrawal Area in NPR-A until Kuukpik has received conveyances of all lands to which it is or may become entitled under ANCSA and ANILCA.

As noted above, Kuukpik's comments here are limited to leasing within Kuukpik's Withdrawal Area. Kuukpik will comment separately on leasing within the remainder of the study area.

Sincerely,

KUUKPIK CORPORATION

By Joe Nukapigak
Joe Nukapigak
President

cc: City of Nuiqsut
Native Village of Nuiqsut
North Slope Borough Planning Commission
Mayor, North Slope Borough
Arctic Slope Regional Corporation
NPR-A Planning Team Leader
Jim Ducker
Bruce Babbitt
Deborah Williams

NATIVE VILLAGE OF NUIQSUT
P.O. Box 112
Nuiqsut, Alaska 99789

March 12, 1998

FAX 271-5479

Mr. Gene Terland
Mr. Jim Ducker
NPR-A Planning Team
Bureau of Land Management
Alaska State Office (930)
222 W. 7th Avenue
Anchorage, AK 99513-7599

Re: Draft IAP/EIS
NPR-A Study Area

Gentlemen:

The Native Village of Nuiqsut agrees with and endorses the position of Kuukpik Corporation on proposed leasing in NPR-A and the draft IAP/EIS, as stated in Kuukpik's comment letter of March 12, 1998.

Give me a call if you have any questions.

Sincerely yours,

NATIVE VILLAGE OF NUIQSUT

By Thomas Napaqcak
Thomas Napaqcak
President

TOTAL P.02

1670-001
The BLM has sought the concerns of North Slope Borough residents. The agency has held ANILCA 810 hearings in conjunction with its public hearing in each village in and near the planning area and has incorporated many of their concerns into the IAP/EIS. For a discussion of the requirements to current findings, please see Response 1670-012.

A revised draft IAP/EIS would be appropriate, if the Preferred Alternative presented in this final IAP/EIS was outside the range of alternatives presented in the draft. We do not believe that is the case. For example, the area made available for leasing falls approximately between those contemplated in Alternatives C and D.

1670-002
State and local governmental entities can regulate on Federal lands as long as they do not conflict with Federal purposes. The IAP/EIS explains the local land use plans that exist in the region. While we did not quote or reprint *Nuiqsut Paisanich*, it was taken into consideration. We agree that local involvement and consideration of local views is appropriate. As was demonstrated by the involvement of the North Slope Borough in this process, we are working closely with local government.

1670-003
There is a misunderstanding with respect to the scope of the analysis contained in the leasing alternatives. The BLM does not intend to imply that accepting Alternative B will preclude any future development in the Kuukpik Corporation Entitlement LUEA, only that leasing in this area would be postponed until Kuukpik's land selections have been satisfied. The environmental analysis contained in the IAP/EIS focuses on the impacts from development on the lands actually offered for leasing. Under Alternative B, the analysis of possible activities in the Kuukpik LUEA broadly would be covered only in sections dealing with cumulative impacts.

Postponing leasing in the Kuukpik LUEA will not isolate developments farther to the west, effectively making them uneconomic. The proposed stipulations in the IAP/EIS do not preclude transportation corridors across the Kuukpik LUEA, whether or not this area is leased in one or more future NPR-A lease sales. The general concept is that very restricted opportunities for exploration under Alternative B will result in low industry interest in leasing and exploration. Limited effort will result in the discovery of one small (65 MMbbl) field located somewhere west of the Kuukpik LUEA. A field of this size would be too small to support the necessary infrastructure costs and, therefore, would not be commercial as a stand-alone project. Marginal fields of this size could be economic, if they can be developed as satellite fields that share infrastructure with nearby larger fields. A reasonable distance between the main field and potential satellite fields is not definite, but it is generally considered to be less than 15 to 25 mi. Accepting Alternative B would shift developments approximately this far (about 20 mi) to the west, effectively eliminating the possibility of satellite development strategies. At this time, we do not know where tracts will be leased and new fields discovered; however, the development opportunities would be increased if the lands contained in the Kuukpik LUEA eventually were opened, either by BLM or Kuukpuk (after selection), considering the proximity to the Alpine field.

The alternatives represent a range of options, and the Preferred Alternative was selected from the elements contained in the other alternatives, including whether or not to lease Kuukpik-selected lands.

1670-004
Figures II.C.1-1 to II.C.1-6 have been revised to reflect lands selected by Kuukpik Corporation and ASRC. These lands would not be made available for leasing under any of the alternatives.

1670-005
We have corrected the discussion of the numbers of acres to which Kuukpik is entitled and have enlarged the Kuukpik Corporation Entitlement LUEA and incorporated this larger area in the discussions (and associated figures) for Alternative B and the Preferred Alternative. The commenter also is correct that the State will not be entitled to any funds from lease of tracts subject to escrow for ASRC.

1670-006
Traditional knowledge was considered by various BLM in preparing the description of the affected environment (Sec. III) and the environmental consequences of each management alternative (Sec. IV), particularly in the Subsistence and Sociocultural subsections. Direct quotes from written or oral testimony were incorporated into the text that provided new, supporting, or contrasting information to the discussion. The BLM received and considered dozens of hours of oral testimony from local residents. Also, the traditional knowledge included in this document was chosen to best represent historic Inupiat attitudes and present-day Inupiat concerns on the topics and issues under discussion in the analysis.

In preparing the management alternatives, including the Preferred Alternative, BLM considered local concerns by implementing various management actions which provided for the protection of important subsistence use areas, such as no-surface-occupancy restrictions on industrial activities in important subsistence-use areas, and implementation of lease stipulations to maintain the abundance and availability of important resources, and continued access to traditional use sites such as camps, cabins, and hunting and fishing areas (see Response 0106-002). Preferred Alternative Stipulation 61 and the development of a Subsistence Advisory Panel will enable BLM to maintain positive working relationships between the various agencies, industry, and local communities and minimize and resolve conflicts as they arise during leasing, exploration, and development in the planning area for the life of this plan.

The BLM acknowledges Kuupik's concerns about the proper consideration and integration of local information and local knowledge in the NPR-A IAP/EIS planning process. The BLM has held a scoping meeting, an open house, a public hearing, and a 2-day Subsistence Mitigation Workshop in Nuiqsut. In addition to more recent input, 20 years of past public hearings were researched for local knowledge.

1670-007
The BLM has tried to fairly include views by including traditional knowledge in our analytical discussions by talking to local communities, developing stipulations responsive to local concerns, and proposing the Subsistence Advisory Panel as an ongoing body to advise BLM on local concerns and assist in resolution of conflicts. Please see Response 1670-006.

The BLM acknowledges that local Native views reflect many lifetimes of experience and observation, and that they have been hard won from direct experience and practice. The comment that "Where local experience conflicts with commissioned studies, the Draft simply assumes that the Natives are wrong. . ." is noted, and we see in the statement in question on page IV-C-48 of the draft IAP/EIS how the commenter could construe linking statements by the two knowledge systems as disrespectful of the Native view. No such disrespect was intended. The text has been changed to read "Traditional Inupiat observation and experience affirms that whales are. . .."

1670-008
The text has been changed somewhat in response to this comment.

Regarding scientific knowledge on the issue of snow drifting along elevated pipelines and whether it would block caribou movements, the following factors need to be considered:

1. Five feet is the minimum height that pipelines would be elevated above the ground, and the pipeline will be buried at some locations, such as major stream crossing.
2. Elevated (minimum 5 ft) pipelines and their potential effect on caribou movements have been studied by scientists for more than 20 years, ever since the TAPS was built, and snow drifting along the pipeline corridor has never been observed as a problem for caribou.
3. The oil companies monitor the TAPS and oil field pipelines, at least one per week, year-around, and have never observed drifting snow to be a problem.

4. Most caribou of the North Slope migrate south of the oil fields, where they do not confront pipelines with drifting snow. They return to the North Slope in the spring when the snow melts.
5. Drifting snow along the pipeline is expected to be temporary (the snow will melt) and local, with caribou moving across the pipeline at locations where the snow is shallow and has melted away in the spring.
6. Preferred Alternative Stipulation 37 requires that above-ground pipelines be elevated at least 5 feet as measured from the ground to the bottom of the pipe. This will in practice make the pipeline higher than required on State leases because the height will be measured throughout the length of the pipe, not just at the VSMs.
7. Local knowledge will be called upon at the project development stage as required under the Preferred Alternative Stipulation No. 61 to identify areas of special concern in regard to elevating the pipeline above 5 ft.

1670-009
Congress has given BLM the responsibility to manage the NPR-A. The BLM welcomes the advice and values the expertise of North Slope residents and governing bodies. The Preferred Alternative has incorporated a consultation process to better access this expertise (see Stipulation 61). The BLM, however, cannot abrogate its decision making responsibility regarding the NPR-A to others.

1670-010
At the basic level, the IAP/EIS divides impact analysis between impacts from activities other than oil and gas and impacts from oil and gas activities. Within the latter, many specialists have identified impacts from disturbance and from spills. Analysts commonly identified more specific causative relationships between elements of an alternative and impacts. For example, the vegetation specialist has identified impacts from aircraft landings, archaeological digs, camps, overland moves, seismic operations, exploratory drilling, and various aspects (gravel pad, roads, pipelines, etc.) associated with oil and gas development.

Nearly all of the difference in impacts among the alternatives derives from the different areas available to oil and gas leasing. The five alternatives analyzed in the draft IAP/EIS and the six analyzed in the final IAP/EIS provide a range of lands that would be available for leasing. Determining the specific impacts of leasing or not leasing along the Ikpikpuk River or in the Pik Dunes area is beyond the scope of an EIS and could make the analysis more difficult to comprehend. Additional environmental analysis will be required to evaluate site-specific impacts when and if oil development is proposed in the future.

The Final EIS for Sale 170 is published.

1670-011
The cumulative-case analysis has been expanded to include an analysis for each of the alternatives described in the EIS.

1670-012
Significance determinations trigger the 810 notice, hearing, and findings process. Findings are made after 810 procedural requirements, including hearings, are complete and are contained in Appendix D.

1670-013
The ANILCA 810 significance determinations for each alternative refer to the first-sale and the multiple-sale scenarios. The cumulative-case analysis has been expanded to include an analysis for each alternative, and these analyses are included in the ANILCA 810 analysis (Appendix D).

1670-014
Please refer to Section II.G and see Responses 106-003, 1669-017, and AT2-001.

1670-015
The Kuukpik Corporation's comments were considered in formulating the Preferred Alternative. Please see Response 1669-009 for a description of the restrictions on permanent surface structures and consultation requirement relating to Fish Creek. In addition, no permanent surface facilities except necessary, roughly perpendicular transportation crossings would be allowed within 1 mi of the top of the bluffs along the Kikiakrorak and Kogosukruk rivers. The same would apply to the Colville River, except that no road crossing would be allowed. Also, lessees specifically would be required by Preferred Alternative Stipulation 61 and 62 to engage in a consultation process with affected communities prior to any exploration or development actions on public land within 2 mi of these three rivers.

Post Office Box 1232 • Barrow • Alaska • 99723-1232 • (907) 852-2762 • FAX (907) 852-2763

Arctic Slope
Native Association Limited

1671

COMMENTS TO THE
U.S. DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
ON THE

DRAFT INTEGRATED ACTIVITY PLAN / ENVIRONMENTAL IMPACT STATEMENT FOR THE NORTHEASTERN PLANNING AREA OF THE NATIONAL PETROLEUM RESERVE IN ALASKA

March 12, 1998

Prepared By:
Michael Kaplan Pederson, Natural Resources Specialist
Department of Natural Resources

Anaktuvuk Pass • Atqasuk • Barrow • Kaktovik • Nuiqsut • Point Hope • Point Lay • Wainwright

INTRODUCTION

The Arctic Slope Native Association, Ltd. (ASNA) is the regional non-profit Tribal consortia dedicated to and striving for Native self-determination, with headquarters in Barrow, Alaska. ASNA provides services under a Public Law 93-638 contract to its Tribal members in the following communities and are *Federally recognized Tribes:* Anaktuvuk Pass, Atqasuk, Kaktovik, Nuiqsut, Point Lay (has IRA status) and Wainwright. ASNA also operates and manages the Samuel Simmonds Memorial Hospital in Barrow.

The Department of Natural Resources provides technical assistance to the six Tribal Councils within the ASNA contract service area to ensure that there is adequate management and protection for the areas Natural Resources, both renewable and non-renewable. The department has been involved in tracking concerns such as lease sales, and provides written and oral comments on issues affecting our Tribal members. The Inupiat people's concerns need to be addressed to help protect potential impacts from future oil and gas exploration, which may lead to development and production, to our traditional way of life. This includes a variety of subsistence activities that occur year-round, and includes caribou hunting, fishing, bowhead whaling and hunting migratory waterfowl. The continuation of the traditional subsistence activities based on the Inupiat culture is as important to us today as it was in the past. Our people continue to have ties to our land and wildlife resources with countless generations of Inupiat people depending on those resources to provide food and clothing.

It is the intent of these written comments to protect the subsistence resources important to our Inupiat people that might be impacted by oil and gas activities in and near the NPR-A study area. This includes the protection of all traditional uses by the Inupiat residents, and includes various subsistence uses, Native allotments, hunting and fishing camps and cabins, historical and cultural areas as well as the continued use of access routes.

NATIONAL PETROLEUM RESERVE-ALASKA

Under the original terms of the Alaska Native Claims Settlement Act, the Federal government did not allow land selections in NPR-A away from village areas, even though these areas have been utilized by residents for subsistence purposes. The Inupiat people have always used areas outside of selected village lands as traditional hunting and fishing camps since time immemorial. Countless generations of Inupiat families have used their traditional lands to provide for their families, relatives and friends in times of shortages, and it continues today. In addition to this, the regional Native corporation for the North Slope, the Arctic Slope Regional Corporation (ASRC), was limited in its ability to select lands that are important to the Inupiat people. Those selections include lands that are important as subsistence use areas for hunting, fishing and camping, and include those lands that have possible economic potential. ASRC and village corporations should be allowed to select its lands prior to any effort by the federal government to open any portion of NPR-A to oil and gas leasing activities. Although the lands in question are under the jurisdiction of the BLM, federal policy is not always compatible with the desires of 001

the local people who live here, and that there is a very valid concern about the way any NPR-A study may affect the long-term use of certain areas of land by our Inupiat people. Such detrimental impacts may include designating specific areas in NPR-A as wildlife refuges or national parks that may change the status of lands in NPR-A. It is in the best interest for lands in NPR-A to be under the continued jurisdiction of BLM, under existing law, policy, regulation and practice. The experiences of residents from Anaktuvuk Pass under the National Park Service and residents in Kaktovik under the U.S. Fish & Wildlife Service reinforce this decision to have continued BLM jurisdiction. Access to certain areas had limitations, thereby not allowing persons to practice their subsistence lifestyle.

The Department of the Interior is urged to require the use of the best available and safest technology. The best oil-industry land use planning and practices must be used in connection with any NPR-A oil and gas leasing program. This will reduce impacts by reducing the footprint of exploration and development activities. Adverse impacts on the land, the environment and subsistence resources can be minimized with this effort. This can be achieved by consulting with the various village and regional entities.

SUBSISTENCE

The subsistence activities of the Inupiat people on the North Slope is a very important aspect of our daily lives that enable us to provide food and clothing. Sharing of these resources is an Inupiaq value that has been passed down from one generation to the next, and it still continues today. The protection of our subsistence resources during any aspect of oil and gas exploration needs to be addressed. The importance of subsistence resources is not just limited to the wildlife, nor its habitat. It also includes the cabins located on traditional hunting and fishing camps, and the cultural and dietary importance of the wildlife that is caught. 002

The majority of lands in the NPR-A planning area is under the jurisdiction of the BLM, except for small portions of selected or conveyed lands by the village and regional ANCSA corporations in the immediate vicinity of Nuiqsut. As a result, the regulations in the Federal Subsistence Management Program are followed under Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA). The federal regulatory and management regime has worked well when it comes to subsistence. Other lands that are under the jurisdiction of other federal agencies (U.S. Fish & Wildlife Service and the National Park Service) have proven difficult, at best, when it comes to working with local agencies, either on subsistence issues or differences of opinions on how certain land designations will be accomplished. It is in the best interest of the local people and the federal government that jurisdiction over lands in the NPR-A planning area be limited to the BLM.

Several areas should be deferred and/or deleted from any oil and gas lease sale in the NPR-A planning area due to the importance of the ecosystem and the wildlife it supports. ASNA is not advocating for any special management areas, but is simply offering one alternative to protect wildlife resources by deferring those areas that are ecologically important to our Inupiat people. The western

shores of Harrison Bay, the coast near Atigaru Point and the land surrounding Teshekpuk Lake (previously a Special Management Area) are an important area for the Teshekpuk Lake Caribou Herd. This is their calving area as well as an insect-relief area. Also, black brants and several species of migratory waterfowl (geese, eiders, etc.) have been known to nest and molt in the areas surrounding Teshekpuk Lake. The areas that are ecologically important include coastal land and those lands directly adjacent to the numerous rivers and creeks found in the planning area. It might be in the best interest to delete or defer those lands around the Teshekpuk Lake area that are home to the caribou and several species of migratory waterfowl as well as areas used for subsistence fishing.

It is necessary that all access routes used by the residents of the NSB to their cabins, hunting and fishing camps, Native allotments, subsistence areas and other traditional and cultural use areas remain open for use by residents. Residents must not be impeded to gain access to these areas by oil and gas leasing activities such as exploration and development activities in the NPR-A study area. 003

The community of Nuiqsut is presently surrounded by oil and gas development. There is concern that village residents in Nuiqsut will have their traditional subsistence hunting and fishing grounds severely limited. Fish Creek and the Nigliq Channel provide an abundance of arctic cisco and broad whitefish, and are important fishing areas for the residents of Nuiqsut. In addition, any identified spawning areas for the several species of fish caught by Nuiqsut residents, and by residents from throughout the region in the NPR-A planning area should be deleted from any proposed lease sale. 004

If any buffer zones are created, they should be as minute as possible so that the continued use of subsistence areas is not restricted. This will be an issue along the rivers, creeks and lakes in the NPR-A planning area. 005

IMPACT AID

It is imperative that impact aid be provided to those villages located in NPR-A. The impacts that may occur will have a detrimental effect to the traditional lifestyle of the Inupiat people. The Inupiat residents of the region have been dealing with oil and gas leasing activities for 20 years, and very little, if any, impact aid is provided, either by the Federal or State governments, or the oil industry itself. There should be no change in the NPR-A Special Reserve Fund (A.S. 37.05.530). This would allow impacted communities to apply for funding for essential public facilities and services that any oil and gas leasing activities may impact, or require.

HISTORICAL/CULTURAL RESOURCES

There are several prehistoric and archaeological sites located in NPR-A that deserve protection, because we as Inupiat people are still learning about our past, even today. The historical and cultural resources have given us the hindsight necessary to live a traditional lifestyle, while taking the best the

western world has tu uffer. We are still learning about the history of our people through the wisdom of our elders, and from artifacts collected by numerous archaeological expeditions. It is imperative that these resources are protected. Various sites are located over a vast area, and there are probably cultural sites that haven't been previously identified due to a variety of reasons. The Inupiat have a history that dates back to about 12,000 years, and probably even further than that as new techniques become available to carbon date artifacts, and the new advances being brought to the forefront as new archaeological evidence is found throughout the Arctic.

NATIVE ALLOTMENTS

ASNA realizes that BLM is aware of several Native allotments in the area and are considered 006
private property. It is imperative that since there is a very real potential for trespass resulting from any
associated activities from oil and gas exploration, that the necessary permits are approved before any
activity commences. This would certainly alleviate any fears of trespass problems. The survey of any
allotments that have not been completed as of yet would also avoid trespass problems. Most of the
allotments in the subject area are approved and awaiting survey. ASNA understands that some surveys
have been scheduled for the summer field season in 1998.

TRADITIONAL KNOWLEDGE

Indigenous peoples in the Arctic are heirs to an extensive body of traditional knowledge, based on 007
several generations of collective observation and experience, which can contribute to western scientific
knowledge that is required to successfully protect, monitor and restore Arctic resources.

The traditional knowledge of the Inupiat people will be a very important aspect of any action related to this process. It will no doubt provide insights into the way things work in the Arctic that cannot be described through western science, and no one else knows how the resources will react to certain disruptions. Traditional knowledge can also include answers to questions that have remained unanswered. Our knowledge of the land and sea, and especially that of the wildlife resources and the surrounding environment (including wildlife habitat) which occupy this area is something that will need due consideration.

Please refer to comments that the BLM has received from the residents of the North Slope during your scoping meeting process as well as for the public hearings. The transcripts of these meetings provides the details about the residents knowledge of the land and its resources.

We, Inupiat, comprise a single Arctic regional community. For thousands of years, our common economic interests have centered upon the food chain upon which we depend for survival. Now, since the Prudhoe Bay oil strike, we have been additionally bound by the world's need for our oil, gas and coal. Arctic knowledge has become a regional industry in which the demand for competent scientists is becoming greater than the supply. However, this regional industry is not community-based. It neither seeks nor includes the knowledge that we Inupiat possess. Arctic science seems unconnected to the wealth of Arctic knowledge stored in our language. Inupiaq. Far from being community-based, the industry of Arctic knowledge is controlled by essentially national and industrial interests. This industry is not organized to meet our regional community needs, but rather to meet other community needs. Needs like military defense. The needs of duck hunters of Detroit. And now, the pressing need for oil, gas and coal. Sharing is important social behavior in the Arctic. We want to share our wealth in oil, gas and coal, but we feel that we must have a say in the means by which our fuels are extracted from our land. Sharing means to us that we must be allowed to measure environmental risks in our own Inupiaq language. For in our language is a whole natural science of the Arctic.

Eben Hopson, Sr., Mayor - North Slope Borough
October 1977

ONSHORE OIL AND GAS DEVELOPMENT PREFERRED

ASNA, as a matter of policy, believes that it is much safer to explore for oil and gas reserves onshore, rather than offshore, due to the potential impacts associated with offshore oil exploration in the outer-continental shelf. Although we prefer onshore exploration, our concerns with the land and sea are an important part of our livelihood. We have experienced oil production on our lands for over 20 years, and believe that onshore oil exploration is safer than exploring offshore. Due to the NSB's strict enforcement of its regulations on oil and gas activities, it has ensured environmentally sound development on lands located within the NSB boundaries. Several regional organizations and residents, including elders who have lived and hunted off the land, prefer onshore oil and gas development over the higher-risk offshore development of the North Slope's important oil and gas resources.

The Inupiat residents of the region, have consistently stated with one voice, and have made it clear to several Federal and State agencies, that we as indigenous peoples are determined to maintain control over the development of our regions natural resources. Development on land can be accomplished in a responsible manner that does not destroy our traditional dependence on the land, the sea and the wildlife resources. Exploring for oil offshore is delicate and risky where an oil spill can be potentially devastating. On land, there is the possibility for mitigating effects of an oil spill immediately.

In our region, where a majority of our food comes from the sea, onshore oil exploration and development is preferred because of the known technology that is available (such as horizontal drilling), the many years of successful experience in and around the Prudhoe Bay area, lower levels of risk and less interference with marine mammals and subsistence activities that occur offshore.

Again, it will be necessary to use the best and safest technology that is currently available to reduce the size of any impacts to the environment, while maintaining a subsistence lifestyle for the

residents of the North Slope. BLM has received several comments from the residents that remind BLM that safe oil development can occur in an environmentally sound manner, with minimal impacts to the subsistence lifestyle of the Inupiat people, and without any adverse impacts to the wide variety of fish and game resources that we depend on.

UMIAT

Prior to any future oil and gas exploration in the NPR-A, concerns identified at Umiat need to be addressed. These concerns are presented in subsequent paragraphs. These are issues that Inupiat residents are fearing if oil exploration is allowed in some portions of the NPR-A. The federal government was instrumental in the mess and it was left behind, nothing was really done to get it cleaned up or addressed. Only a few issues have been addressed. This mess at Umiat is a direct result of oil and gas exploration. 008

Subsistence hunters from the communities of Nuiqsut, Anaktuvuk Pass and Barrow as well as from other villages on the North Slope have been known to utilize the Umiat area for subsistence activities. The U.S. Navy built the Umiat facility and research station in the 1940's. **Umiat was also utilized as a gateway for initial oil and gas exploration on the North Slope. During this time, large quantities of hazardous chemicals were used and apparently buried in the area.** In the summer of 1995, inspectors and field representatives from the North Slope Borough (NSB) and residents from Nuiqsut found evidence of a landfill in the Colville River and open wells filled with diesel and petroleum products. It was also discovered that the Colville River was cutting a new channel through an abandoned dump.

ASNA was fortunate to have grant funds available from the Administration for Native Americans to mitigate environmental impacts to Indian lands due to Department of Defense activities. Funds were used to produce an Environmental Site Assessment (ESA) and a Qualitative Risk Assessment (QRA).

The following are the identified contaminants of concern found at Umiat:

♦ Arsenic	♦ Benzene	♦ Benzo(a)pyrene
♦ DDD	♦ DDE	♦ DDT
♦ Lead in water	♦ Lead	♦ PCB (Aroclor 1254)
♦ PCB (Aroclor 1260)	♦ Dioxin	

The conclusions and findings of the ESA and QRA are as follows:

→ A landfill used during the 1973 Navy clean-up was placed in the flood plain of the Colville River. The gravel cover for the landfill has been eroded by the intermittent flow of water and ice through the channel revealing drums, military vehicles, batteries, and assorted debris. Evidence that formerly landfilled material and associated contaminants have been transported downstream was observed.

→ A second landfill near former Umiat Test Well #5 is apparently under the active channel of the Colville River. 008

→ Umiat Test Wells were sealed with an arctic pack of diesel and at least one well (Umiat #6) was observed to have no cap. Additionally, at an area east of Umiat Test Well #5, suspected petroleum hydrocarbons were observed discharging directly into the Colville River. The source of this product is interpreted to be a burn pit that was constructed during drilling and used again in the 1973 remediation efforts.

→ Two samples were analyzed with total PCDDs (a form of dioxin from PCBs) at two chlorination levels. A total of five targeted polychlorinated-dibenzo-furans (PCDFs) were detected in two samples submitted for analysis.

→ Pesticides and polynuclear hydrocarbons (PAHs) were detected in a moss sample collected where caribou were observed grazing. This sample was considered an accurate representation of the caribou fodder in the Umiat area.

One recommendation that will have to be considered is the detailed animal migration and toxicology studies that need to be performed to see if these identified contaminants have been introduced into the food chain.

For more information, please reference the following reports:

1. *Environmental Site Assessment Final Report – Umiat, Alaska*
   Prepared by AGRA Earth & Environmental, Inc., January 1997
2. *Qualitative Risk Assessment Final Report – Umiat, Alaska*
   Prepared by AGRA Earth & Environmental, Inc., January 1997

SELECTED REFERENCES

It is appropriate to mention the Congressional mandate in Section 105 (e)(1) of the Naval Petroleum Reserves Production Act of 1976 (Public Law 94-258). This section directed the Secretary of the Interior *"to conduct a study to determine the values of, and best uses for, lands contained in the reserve taking into consideration…the Natives who live or depend upon such land…."* As a result, this study provided a comprehensive statement on Native dependence and livelihood, historic values and Native recreation. The primary focus was to provide a background for understanding Inupiat land use values over time. 009

To gain a better understanding of the Inupiat peoples use of the land and its resources, ASNA would like to add the following references for additional background material, which may provide useful information:

1. *Native Livelihood & Dependence, A Study of Land Use Values Through Time* U.S. Department of the Interior, National Petroleum Reserve in Alaska 105 (c) Land Use Study, 1979
2. *Ecological Profile*, U.S. Department of the Interior, National Petroleum Reserve in Alaska 105 (c) Land Use Study, 1978

Currently, the community of Noiqsut is the only village in the NPR-A study area. Information about the subsistence harvest of wildlife resources is available and contains information for a one-year period:

3. *North Slope Borough Subsistence Harvest Documentation Project: Data for Nuiqsut, Alaska, For The Period July 1, 1994 to June 30, 1995*, Department of Wildlife Management, North Slope Borough, 1997

Additionally, a study on the village of Nuiqsut's traditional land use area was completed in 1978, and revised in 1988:

4. *Land Use Values Through Time in the Nuiqsut Area*, North Slope Borough and The Anthropology and Historic Preservation Section of the Cooperative Park Studies Unit, University of Alaska, Fairbanks. 1988

009

DRAFT INTEGRATED ACTIVITY PLAN / ENVIRONMENTAL IMPACT STATEMENT

ASNA is disappointed that the BLM did not identify a preferred alternative in the draft EIS. ASNA would have liked to debate the merits of any chosen alternative, and does not have the necessary staff and technical resources available to review each proposed alternative. ASNA is also hesitant on what will actually be included in the final EIS. It is so often that a federal agency decision is made without respect to the identified concerns in scoping meetings and public hearings, and that the impacts of those decisions affects the residents who reside in the area. Again, please refer to the transcripts in the scoping meetings and public hearing process to identify those concerns and be responsive. The biggest fear that ASNA has is that the impacts of any decision will create impacts to the people who live here and we are the people who will have to live with a federal agency decision. The impacts to future generations of Inupiat residents are not well understood. 010

The draft did not contain the necessary scientific information prepared by dozens of scientists over the years, and does not refer to any of the studies conducted by various organizations that identify impacts and/or addresses mitigation measures. Although the BLM has worked hard in working with the concerns of the residents by coordinating a symposium on the wildlife in NPR-A and in gearing up a subsistence oversight panel necessitates the concern for subsistence as well as the protections for the fish and game resources. 011

Please be reminded at public scoping meetings, the Native community expressed its concern for protecting subsistence resources, and the need to better identify and protect important subsistence harvest areas. There is a need to present cumulative impacts as well, no matter how difficult that is. This was raised because of the incremental development surrounding the village of Nuiqsut and the fear of loss of subsistence use areas, and the impacts development has on migratory animals, such as caribou. 012

ASNA is opposed to any new special management areas that may be created or discussed, as well as the expansion of any existing special areas. ASNA also opposed any federal wilderness and wild and scenic river designations within NPR-A. New conservation units within NPR-A are opposed as well.

CONCLUSION

Oil and gas leasing activities should proceed in appropriate areas subject to responsible, state-of-the-art regulations and stipulations which will protect the land, the environment, fish and wildlife, other subsistence resources and the traditional uses of the Inupiat people, including their culture and interests of all residents in the North Slope region.

There can be balanced oil and gas development on land, but there is a need to take into consideration the Inupiat people's cultural livelihood, the concern about impacts to wildlife resources, its habitat and the subsistence activities that are tied to the land.

Families rely on the land and the sea for caribou, marine mammals, fish and other wildlife for food. All oil development activities must be conducted in places and in ways that do not interfere with traditional subsistence hunting activities.

...First, without direct Inuit involvement and participation there can be no assurances that resource development in the Arctic will occur without serious environmental consequences. Ours is the language of the ice, and our knowledge of the Arctic has never been adequately assimilated into the community of industrial and scientific Arctic knowledge. Second, the Arctic must be viewed as a contiguous region for planning and environmental protection purposes. An environmental accident, whether it be an Arctic oil spill or the desegration of caribou calving areas, will affect all Inuit who rely upon the resources of the Arctic for subsistence.....After the mineral resources of the Arctic have been taken, it must remain possible for our culture to survive.

Aboriginal rights in and titles to the circumpolar region or parts of it must be settled before development proceeds in that region.

Subsistence hunting is an inalienable right. The Inuit must not be made to sacrifice their culture and subsistence rights as the price of either development or national political tradeoffs.

Arctic Policy: The Local/Regional Perspective
by Eugene Brower and James Stotts, 1984

1671-001
Under the Preferred Alternative the BLM will defer from its first oil and gas lease sale those lands Kuukpik identifies for selection.

1671-002
Proposed stipulations and particularly the creation of the Subsistence Advisory Panel were designed to address local subsistence and cultural issues and the protection of these resources in terms of their cultural and dietary importance. The Preferred Alternative includes several stipulations that specifically address local concerns on subsistence access, resources, traditional land use sites, and camps and cabins (see Stipulations 39, 59-62 and 64). The BLM also proposes the formation of a Subsistence Advisory Panel (see Sec. II.F.6) to provide a forum for addressing ongoing and future subsistence issues with regards to oil and gas activities.

1671-003
The BLM recognizes the importance of subsistence to the lives of North Slope residents. Stipulation 60 prohibits oil and gas lessees from unreasonably restricting subsistence users' access to oil field development areas. In addition, lessees are required by Stipulation 61 to, among other things, consult with local communities and the Subsistence Advisory Panel regarding potential conflicts between oil and gas exploration and development and subsistence activities and to report to BLM concerns expressed by subsistence users and the steps the company has taken to address the concerns.

1671-004
Important fish habitat will be protected in the Preferred Alternative primarily by restrictions on surface occupancy for oil and gas exploration and development. For example, Stipulation 39 for the Preferred Alternative prohibits permanent oil and gas facilities (except essential pipeline and road crossings) within a certain distance of a number of waterbodies. The Preferred Alternative establishes a 3-mi setback on either side of Fish Creek for much of its lower length, and a ½ mi setback for the rest of the stream.

1671-005
The "buffer zones" created under Preferred Alternative Stipulation 39 apply to oil and gas lessees, which restrict the siting of permanent oil and gas facilities in order to minimize impacts on subsistence resources and uses. Preferred Alternative Stipulation 62 identifies land use areas that are important for subsistence users and resources in which the lessee must initiate the consultation process outlined in Preferred Alternative Stipulation 61. Access by subsistence users are not restricted in those areas identified in stipulations 39 and 61.

Preferred Alternative Stipulation 79 creates a buffer zone of 100 feet along lakes and streams, in which no permanent structures can be built, in order to minimize impacts of concentrated human use on water quality and aquatic habitat. This stipulation may apply to future cabin construction.

1671-006
All Native Allotments within the NPR-A Planning Area and those immediately to the west of the Ikpikpuk River have been scheduled for survey in 1998. Once these parcels are surveyed, BLM should be able to reduce trespass conflicts.

1671-007
Please see Response 1670-006.

1671-008
Please see Response 1669-025. The problems identified concerning solid and hazardous wastes at the Umiat Site predate the strict environmental regulations we now have. Many of the practices that caused the concerns and problems at Umiat now are prohibited or restricted by stipulation, mitigation measures, and existing Federal and State laws and regulations. See Preferred Alternative Stipulations 1, 3, 4, 5, 6, 7, 9, 10.

1671-009
All of the references suggested by ASNA already have been consulted and are cited in text in various subsistence and sociocultural sections of the draft EIS. Different citings in the text and in the bibliography may have created some confusion. *Native Livelihood and Dependence: A Study of Land Use Values Through Time*, U.S. Department of Interior, 1979 was cited as North Slope Borough Contract Staff, 1979; *Ecological Profile*, U.S. Department of the Interior, 1978 was cited as USDOI, BLM, 1978b; *North Slope Borough Subsistence Harvest Documentation Project: Data for Nuiqsut, Alaska, For the Period July 1, 1994 to June 30, 1995*, Department of Wildlife Management, North Slope Borough, 1997 was cited as Brower and Opie, 1997; *Land Use Values Through Time in the Nuiqsut Area*, North Slope Borough and The Anthropology and Historic Preservation Section of the Cooperative Park Studies Unit, University of Alaska, Fairbanks, 1988 was cited as Hoffman, Libbey, and Spearman, 1988.

1671-010
Please see Response 1670-0060.

1671-011
The Final IAP/EIS will incorporate the findings of additional studies brought to our attention by commenters.

1671-012
Protecting subsistence resources and uses has been a major concern for decision makers. The Preferred Alternative contains many protections. This includes establishing some no surface occupancy areas and adopting a number of stipulations to specifically protect subsistence.

1672

March 12, 1998

NPR-A Planning Team
Bureau of Land Management
Alaska State Office (930)
222 W. 7th Avenue
Anchorage, Alaska 99513-7599

Subject: Comments on NPRA Draft EIS, Cultural Resources

To The NPRA Planning Team:
Although I have concerns for a number of areas covered by this EIS, I will restrict my specific comments only to the cultural resources section, pages III-C-4 to III-C-7. These comments are based on my own experience in Alaskan cultural resources studies spanning nearly twenty years, and more than ten years involvement with research in NPRA and elsewhere on the North Slope.

General Comments:
As a review and analysis of existing data as required under NEPA, the section III description of the environment falls short by a wide margin. This provides neither an adequate summary of existing data, nor does it analyze those data in any meaningful manner. There needs to be systematic review of literature, organized in some understandable way (by sub region, by time period, etc.), instead of the author's rambling, "Mesa-centric" view of the NPRA. What are the number of known sites we are dealing with? How are these broken down by time? What previous research has been carried out? What subareas of NPRA have previous surveys covered? Basic literature for NPRA is completely omitted: noticeably lacking are the annual reports by Edwin S. Hall Jr, compiled during the late 1970s and early 1980s for the NPRA/USGS exploration program. It is not my place here to review the literature for you, but summaries of the NPRA literature are provided in numerous reports by USGS, BLM, the Park Service 105(c) studies and elsewhere. 001 002

Especially given the "early man" emphasis of the draft EIS, it is noteworthy that important early archaeological sites and related environmental data from northeast NPRA are not even mentioned. Of particular importance are flatted points found by Craig Davis in the Teshekpuk Lake area, and the significant Pleistocene dune fields reported by a number of researchers, notably David Carter of USGS. Even more importantly, especially to the people living on the North Slope today, this review almost totally ignores the recent end of the time scale. There are highly significant late prehistoric and historic period sites, including major village sites in the Colville River basin, and other sites along the Ikpikpuk River and along the coast, that are of profound significance to the Inupiat people. These are totally ignored in the draft EIS and must be addressed. 003 004

These comments do not address section IV "Environmental Consequences" other than to emphasize the importance of following section 106 of the National Historic Preservation Act. All areas of proposed ground disturbing activities need to be inventoried and evaluated prior to proposed actions. This work would be best done by private contractors under contract to individual lease holders, not by BLM government researchers. This is especially true in Northeast NPRA, in areas underlain by the relict Pleistocene dune field. Also, the Section 106 process now more than ever stresses consultation with Native American groups as part of the process. This needs to be discussed in greater detail. In what ways, and when in the process, are Native Americans invited to participate in the Section 106 process in NPRA? The writer(s) of this section need to re-read the revised NHPA laws and regulations, especially those found in 36 CFR 800. 005 006

Specific comments:
Paragraph 1. "there is no locale in the western hemisphere that is more historically significant than Alaska's north slope:" is another Mesa-centric view of the universe, that is not only very debatable by other researchers, but also inconsiderate to indigenous people in other parts of the hemisphere who have their own proud culture history and creation myths that signify to them the importance of their homeland. 007

Paragraph 2. "By consensus of the international community, the Mesa site is considered one of the most important archaeological sites in the western hemisphere" begs the same response as the preceding comment. The Mesa site is an important site, however, there is no "consensus" regarding its' standing in the National League of archaeology. When were these ballots cast? 008

Paragraph 5. "...the only place where the culture history of our half of the globe can be traced..." is ridiculous. What does the north slopes' culture history have to do with the Amazon basin or the rise of Mayan civilization, except for the question of new world origins? 009

Paragraph 5. "considered by most scholars to represent the first indigenous North American culture." Again, there is no consensus on this topic. 010

Paragraph 6. Where do these dates on Northern Archaic come from? The benchmark site by which the Northern Archaic is defined in northern Alaska is the Onion Portage site on the Kobuk River. There, the two regional variants of Northern Archaic, Palisades-Tuktu date to 5800-4100 BP, not 8500-4500 as suggested. Elsewhere in Alaska, Northern Archaic may persist to as recently as 2000 BP. In Anaktuvuk Pass, it may date to as early as 6500 BP. 011

Paragraph 7. It is not correct to suggest that the ethnographically -defined term "Eskimo" began 5000 years ago. Some ancestral group to the modern Inupiat speakers may have lived on the North Slope then, but it is doubtful they called themselves "Eskimo". 012

Paragraph 8. Thule needs to be discussed; indeed, all of the archaeological cultures discussed here need to be presented in a coherent framework instead of this rambling fulksy narrative. 013

Paragraph 10. The word "Century" is mis-spelled. 014

Paragraph 11. It is open to considerable debate whether or not there is 12,000 years of "continuous" occupation on the north Slope. For one thing, not all scholars accept the earliest dates from the Mesa site, accepting instead a dating more in the vicinity of 9730 to 10,240 BP instead of 11,700 BP. Continuity cannot be demonstrated across time or space 015

on the North Slope until the phases of the Arctic Small Tool tradition are considered; some workers would even question the continuity across the ASTt. 015

Paragraph 11. This discussion fails to meaningfully analyze the sites in NPRA in terms of temporal, cultural, and geographic distribution. How does this relate to planning for oil and gas exploration and development? There needs to be some discussion of the utility of developing a predictive model, presumably one that is GIS-based, to predict site locations based on factors such as geography, environment, and culture. 016

Paragraph 12. The Traditional Land Use Inventory of North Slope Borough is a significant database of site information that is of critical importance to understanding the historic period in Northern Alaska. This section needs to be developed more, taking into greater consideration the TLUI and other sources of ethnohistoric and historic sources. 017

Summary:
We recommend this section of the draft EIS be substantially re-written. As it now stands, it fails utterly to provide a meaningful analysis of existing data, does not review the existing literature, and thus fails to meet the requirements of NEPA.

Thank you for providing an opportunity to comment on the Draft EIS for NPRA.

Sincerely,

S. Craig Gerlach
Associate Professor

1672-001
The general number of known archaeological sites for the entire NPR-A as well as the Northeast NPR-A Planning Area is provided in Section III.C.2. The data necessary to comprehensively categorize sites into occupational time periods are not available and are beyond the scope of this document. Additional references concerning previous research pertinent to the Northeast NPR-A Planning Area have been added. Section III.C.2 has been modified to reflect this information.

1672-002
Additional reference to previous cultural resource research pertinent to the Northeast NPR-A Planning Area has been added. Section III.C.2 has been modified to reflect this information.

1672-003
While the emphasis of Section III.C.2 of this document is not just the "early man" aspect, but the overall cultural history of the North Slope in general and the Northeast Planning Area in particular, we agree that some references to applicable research were overlooked. Additional references have been added and Section III.C.2 has been modified to reflect this information.

1672-004
Except as examples demonstrating the time depth of human occupation on the North Slope, no specific sites or locales are mentioned. A general time line of cultural history of the North Slope is presented and a substantial portion is devoted to the late prehistoric and historic time periods. In addition, the North Slope Borough's Commission on Inupiat History, Language, and Culture is referred to as an extremely important information source, particularly through its Traditional Land Use Inventory. We wish to emphasize that the primary purpose of this IAP/EIS is to provide information to the general public sufficient to understand the potential benefits and impacts of possible activities that might occur in the Northeast NPR-A Planning Area. It is not intended to be a comprehensive treatise.

1672-005
In general we agree with this statement. Although, we are unclear as to the significance of the Pleistocene dune field vis-a-vis government versus private-sector researchers.

1672-006
We are aware of the BLM's responsibilities regarding Native American Consultation, as per Section 106 of the National Historic Preservation Act, the Archaeological Resources Protection Act, and the Native American Graves Protection And Repatriation Act. As stated in the draft IAP/EIS, the North Slope Borough has, from the very beginning of the process, been an active participant in the development of this document. As such, consultation and input has occurred on a regular basis.

1672-007
Although the quote is presented out of context, we agree that the complete statement may benefit from clarification. This is a general statement, delivered from a logical perspective, for the purpose of pointing out that Northern Alaska was probably the first place that a biologically viable human population resided on the soil of the Western Hemisphere. As such, it can be viewed and/or revered as a hallmark locale—the point of beginning for the evolution and subsequent diversity of New World cultures.

1672-008
We agree that this is overstated. Section III.C.2 has been modified to reflect this information.

1672-009
The quotation in this comment is taken out of context and apparently misunderstood; therefore, some clarification is needed. The statement is intended to convey the perspective that Northern Alaska probably was the earliest locale of human occupation in the Western Hemisphere and continued to be inhabited from that time to the present. As the commenter notes, the statement addresses New World origins and is not

intended to address cultural evolution or presence beyond Northern Alaska. The statement simply addresses the probability that human occupation of the Western Hemisphere occurred first on the North Slope and therefore human habitation covers a longer span of time there than elsewhere in this Hemisphere.

1672-010
No consensus is implied. In its entirety, the sentence reads; "Paleo-indians are thought to have evolved from the mix of Old World cultures contained in the Beringian holding pen and are considered by most scholars to represent the first indigenous North American culture." However, some clarification may be of benefit to this statement. Accordingly, Section III.C.2 has been modified to reflect this.

This Side Blank

1672-011
We agree. A portion of this Section III.C.2 paragraph was inadvertently left out of the draft IAP/EIS. Section III.C.2 has been modified to reflect this information.

1672-012
The term "Eskimo" as used in Section III.C.2 of this document is based on material culture identifiers and similarities in the archaeological record and not on an ethnographic derivation. However, we agree that because the English word "Eskimo" stems from the French corruption (Eskimeaux) of an Algonquian (Cree) word "Askimowew" meaning "eaters of raw meat," that the cultural groups we identify as "Eskimo" never, until recent times, used that word to refer to themselves.

1672-013
The primary purpose of this IAP/EIS is to provide information to the general public sufficient to understand the potential benefits and impacts of possible activities that might occur in the Northeast NPR-A Planning Area. Therefore, as per Section III.C.2, a general time line of culture history of the North Slope is presented rather than a comprehensive cultural chronology.

1672-014
The spelling has been corrected.

1672-015
Whether there has been 12,000 years of continuous human occupation of the North Slope is in reality a moot point. Given the accepted cultural chronology of the area it would be unlikely that humans have not occupied northern Alaska since the time of their initial arrival.

1672-016
As previously mentioned, the primary purpose of this IAP/EIS is to provide information to the general public sufficient to understand the potential benefits and impacts of possible activities that might occur in the Northeast NPR-A Planning Area. Therefore, as per Section III.C.2, general information is presented rather than a comprehensive treatise. The distribution of known archaeological sites in the Northeast NPR-A Planning Area is shown on the cultural resource map found in this section. Additional information is available in the North Slope Borough's Traditional Land Use Inventory. We agree with the commenter that other things need to be done to develop a complete picture of North Slope cultural resources. Such undertakings are not required or necessary at the IAP/EIS level, but are necessary and required at the Environmental Assessment level. However, as the commenter stated in Comment 1672-005, most of such work would best be done by private contractors under contract to individual lease holders, not by BLM government researchers.

1672-017
Please see Response 1672-016.

1673

March 12, 1998

Gene Terland
BLM (930)
Alaska State Office
222 W. 7th Ave
Anchorage, AK 99513-7599

Dear Gene:

Following are my comments on the Draft IAP/EIS for the Northeast National Petroleum Reserve.

I am opposed to leasing in the NPR-A at this time, with the Draft IAP/EIS as the vehicle. If I had to pick an Alternative, I would choose Alternative A, not because I think drilling is incompatible with an oil reserve, but because the areas that should not be leased and the areas that in fact may not be leased enjoy no real protection from roads, pipelines, or materials sites--intrusions that impact the abundance and availability of wildlife, and the feel of the place. What's more, the EIS's narrowly-focused analyses give a superficial overview of the issues in question; the depth of analysis is not there to make well-rounded decisions or to present all the management tools necessary for the Secretary to enact his decisions.

Reading the IAP/EIS raised more questions than gave answers. As a courtesy, at least, I had asked in scoping that you answer the public's questions before you drop us more information on your march to your deadline. That we don't have the answers to our questions makes me wonder if you read them in the first place.

Instead of printing "the BLM" every time, I have opted to use instead, "you" to indicate the agencies involved in the planning and development of this EIS.

PROCESS

Discussion of Need

The EIS's discussion of Need for the IAP/EIS (Sec. 1A) is important. This was your opportunity to build your legs to stand on, to speak to the reasons for moving ahead--Is there a need/why is it necessary to take up the IAP and the leasing EIS?

You took up the IAP/EIS to "determine the appropriate multiple-use management of the area."(1-1) " . . . because the lands being examined have a multitude of values; we are not doing this just to consider oil and gas leasing." (Summary, p. 1) Yet you did not describe how use levels other than oil and gas activities have increased or are projected to increase *independent of* oil and gas activities in an area hundreds of miles from roads with a resident population of 450. How *have* use levels increased over the last ten years for recreation, sport fishing, subsistence, etc. and is the change significant enough to manage for? I don't think they have; you are throwing other uses into the mix now because they will be impacted by opening to oil and gas. Oil is driving this process and, as *the* user whose impacts are being planned for, the oil industry and its North Slope-wide impacts need exhaustive analysis. 001

You offer an associated justification of need in this clause: "to stem the decline" on the North Slope(EIS Summary, p. v). Related to Need, there is not adequate consideration of other opportunity (other oil reserves) on the North Slope, nor are the projects considered(Table VI-G-1) cast in that light: Are there enough prospects on the Slope that NPR-A acreage/oil might glut the North Slope producers? (who are already stemming the decline) And how does that answer get us to the Need to plan for leasing now?

Leasing is at Secretary's discretion. There is no legal hammer to force the Secretary to plan for leasing or to lease now. Leasing is simply provided for in the National Petroleum Reserve Production Act. What is the fire under the Secretary's feet--what's the need?

How is the national interest in conservation served by leasing the NPRA when the Arctic National Wildlife Refuge is still, by all accounts, still up for grabs? And how does leasing a wild piece of land that happens to be a petroleum reserve fit with "the total energy needs of the Nation"? (1-2)

Please revisit the issue of Need and give us a good reason.

Discussion of Scope

There is no titled discussion on scope. Four Issues section on 1-9 is perhaps your try at scope. If so, then why is it not so entitled? The scoping issues you ruled out are listed on 11-39 and it is reasonable that they be printed

together. It is reasonable, too, that you actively direct the reader's attention to the issues considered and the issues rejected so that he/she can decide if participating in the the EIS process is worth his/her time.

The scope of a study is critical. For this EIS, the scope determines how much information you can consider to make your decision, what management tools are available to the Secretary to pick from, and the range of public values for public land you consider valid. Like an agency trying to have a nice, little, compact study to bat back and forth, you chose to narrow your scope.

The scope of this EIS and its Alternatives wrongfully ranges narrowly from status quo management to full-tilt leasing. The scope needs to be broadened to at least include consideration of: 1. real protections--Wilderness and/or National wildlife Refuge status, or your best equivalent. 2. whole NPR-A planning 3. a more realistic list of development projects 4. a cumulative impact study for the oil industry across the slope. 002

Preferred Alternative 003

Chicken. Disengenuous. Apt words to characterize your handling of the Preferred Alternative.

Unprepared or unwilling to give a DRAFT indication of Interior's leaning, you tried to make hay of the fact, stating that you'll " . . . . select a Proposed Action after receiving comments from the public." (EIS, II-19). That would be high-minded if it weren't deceitful: before making a *final* decision in the FEIS, you would have taken comment on the Preferred Alternative had you advanced a Preferred Alternative.

Ducking a Preferred Alternative is unusual, by Sally Wisely in her presentation to Partners Without Borders (Second International Conference on Natural Resources and Cultural Heritage, November 17-20, 1997. Tempe, AZ). Also unusual is the public not having an opportunity to comment on the Secretary's Preferred Alternative, the government's proposed action, when it is released this summer. Yes, there's the thirty day appeal period, but that is not the same or as useful as a public comment period. 004

Timeline 005

The most consistently-raised question in scoping was, "Why an 18-month planning timeframe?" That question was raised at every scoping meeting--in Barrow, Atqusuk, Nuiqsut, Fairbanks, and Anchorage. Fairbanks Regional Director, Dee Ritchie, God bless him for his candor, said it best in Nuiqsut: "That time frame was chosen in a meeting by the Sec. of the Interior and the Governor of this State. That's a political decision." (Scoping Meeting, Nuiqsut, April 10, 1997) Though scoping was purported to be the time to identify issues and pressing questions that need answer in the EIS, nowhere in the EIS was this collusion mentioned in answer to the public's question (which still is asked and unanswered). 005

This is a very important document for the Planning Area and the whole *NPR-A*. A political deadline is the wrong impetus in a science-based process. It puts at risk the resources within the NPRA and people who value them. Please slow down. We need a thorough and honest discussion of need for the IAP/EIS, a broader scope, a draft Preferred Alternative in a Supplemental EIS and sixty days in which to evaluate it.

PRODUCT

NEPA Tiering 006

This EIS sets precedent for all future actions in the NPR-A. This EIS will be the bible of the NPR-A, the seminal document from which all future actions will tier. All future actions may require an EIS, but are more likely to require only an EA or an administrative decision (EIS, p. I-9, II-35). All oil and gas activities within the Northeast Planning Area--development plans, drilling plans, transportation plans, additional oil and gas lease sales--will refer back to this IAP/EIS, as will *expansions into other parts of the NPR-A*.

The oil and gas activities that this IAP/EIS will allow give *momentum* to those activities within the planning area. For example: An area is leased to, say, ARCO. They find oil and want to produce it, but it is within a proposed high use goose lake buffer zone. ARCO submits its development plans, etc. (and maybe says it's marginal economically and asks for waivers). The AO handles it with an EA or an administrative decision which will likely give greater weight to ARCO's investment in leasing and exploration, and to ARCO's need to access the resource. Once permitted, oil facilities can degrade values on adjacent lands to the point that those values may no longer have to be considered because they no longer exist. *Momentum* redoubles.

What this EIS allows will be allowed in the planning area; what this EIS allows will be a starting point for planning in other parts of NPR-A. With that in mind, the DEIS would benefit from better analyses and a wider array of management tools to accommodate a broader range of public values for public land.

No Protections

This Draft IAP/EIS will provide documentation and analysis for all future NEPA actions in the NPR-A, but its scope precludes ways to protect habitat

If *momentum* (aka piecemeal planning) is a valid concept, the only way to fully protect other values is to prohibit certain access and certain uses on certain lands.

Secretary Babbitt has the authority under (42 USC. s s 6504(b), 6508) to give " . . . maximum protection of such surface resources to the extent consistent with the requirements of [the] Act for the exploration of the Reserve." The Act does not require that all of the NPR-A or all of a portion be leased. Federal regulation 43 CFR 2361.1.(e)(1) spells-out the Secretary's range of authority to protect surface values, including prohibiting certain access and certain uses on certain lands. Armed with the necessary authority, the Secretary, as the decision-maker, needs documentation in the FEIS to bring to his attention to lands where prohibitions of industrial activities may be desirable. 007

Your attempts at protection: 82 stipulations, Wild and Scenic River, and Special Areas. The 82 stipulations presuppose industrial activity and so are geared toward mitigating impacts. The Wild and Scenic "Wild" classification covers an insignificant .5 mile corridor on either side of the river, would stop well before the delta, short of the right-of-way ARCO is using to put its Alpine pipe, the sites where a road is likely to cross the Colville (either BIA or Alpine). It also has the self-eliminating suitability test wherein "wild" designation needs local support. Special Areas confer no special protections on an area--in fact the lands in a Special Area are undifferentiated from lands outside the Special Areas in terms of protection. Special Areas will receive "maximum protection," yes, but at the Secretary's discretion, which needn't be encumbered by the need for real protections because they are not considered in this DEIS.

The Wild and Scenic River sop is probably doomed. Because it may not work, I urge you to find another way to accommodate all the public input favoring WSR designation. Interpret support for WSR as support for real protections.

An example of inconsistency in the EIS that imperils sensitive areas without real protections. "Any future expansion into NPR-A by the oil and gas industry would be accomplished from existing North Slope infrastructure" (EIS, p. 111-C-53). " . . . [S]taging areas are very important components to development" given the need for stockpiles, remote assembly of facilities, etc. and it is "more cost effective to reoccupy existing sites" (EIS, IV-A-11). That leaves Lonely, smack in the Teshekpuk Lake Special Area. ARCO's expert Mike Joyce smooths things over: "As much as it can, ARCO would try to avoid another Deadhorse in NPR-A." (Proceedings of the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop, p.5) So how 'bout it? How about some clarity on this: how will NPR-A development be supplied 008 and how will that impact wildlife and habitat, subsistence, and recreational uses, and what can be done to deal with it? 009

The FEIS needs to incorporate real protections into the Alternatives so that the Secretary might find the necessary documentation to guide his discretion to prohibit access and activities in, say, the CRSA and the TLSA. 010

I support addition of the Pik Dunes Special Area.

I oppose the Umiat Airpark. As even the 1983 EIS recognized, "Tourism may increase to the Reserve if visitor-oriented facilities and activities are increased" (FEIS on Oil and Gas Leasing, BLM, 1983). I'm for people using the wilderness. But I'm against giving it to them or making it easy. We all need more practice relying on our capabilities, not what some one or some agency can do for us.

Please prohibit leasing and surface occupancy (by industrial oil-related facilities) in the CRSA, the TLSA, all the medium and low petroleum potential portions of the planning area. That still leaves about 450,000 acres of high petroleum potential for the oil companies to fight over in the first lease sale. 011

Dismissal of Wilderness

You eliminated from consideration wilderness qualities and permanent protection for those qualities. You admit that solitude and primitive conditions prevail in the Planning Area. Eliminating wilderness protection from the Alternatives is at odd with fact and the need to protect wild country.

What today better characterizes the NPR-A and much of the planning area than wilderness? It is said that wilderness is in your mind. It is not. Wilderness is a feeling: the grizzly is not a figment of your imagination, any more than going hungry is in your mind, or being two hundred miles from help. Serious, long-term protection for qualities like solitude, silence, challenge, open space, wonder, and wild animal populations--that's what you need to fit into your management plan because that's what exists in the land now and those are among the qualities likely to take it hard from oil development.

I don't think you have done enough to ensure the continuance of the feeling of the place. There needs to be serious measures in place to prohibit activities in support of industrial activities that threaten other uses. 012

Wilderness designations, National Wildlife Refuge status, or a Special Areas with leasing and surface occupancy prohibitions would do the job. 012

The quality of scenic discussions leaves much to be desired. For evaluation of the scenic and recreational qualities, you rely on pre-ANILCA HCRS reconnaissance trips. These people were likely jaded, having spent the summer in the Brooks Range. The subtle, sweeping qualities of the foothills and coastal provinces were lost on them--that's why the planning area ranks a very subjective "C" on most SQRU tests. 013

Much has changed since ANILCA days. Namely, America's appreciation for wild country is keener and the NPR-A is being opened again with greater chance--if not certainty--of development. You seem to be operating on the basis of a now-defunct statement in the ROD for the 1983 EIS: "NPR-A is a frontier area where little is known about specific oil and gas potentials, costs of development are extremely high and overall risks for developers are great." (p. 5)

Please protect the Colville SA and the TLSA and the Pik Dunes and the Ikpikpuk River from industrial development activities. Statutory protections can be rewritten in the future, but with oilfield facilities in sensitive areas, there is no going back in this lifetime.

I see there being essentially a threesome of related values in the NPR-A: subsistence uses and habitat needs, and wild aspects. You've held symposia on subsistence and goose and caribou to learn how to mitigate for these uses and these animals. You should have had one for wilderness qualities and how to protect them. I recommend that you now convene a panel of experts on wilderness values and protections in the NPR-A. 014

Whole NPRA

That same *momentum* mentioned above that favors oil first over subsistence, habitat, and wilderness needs will transfer to the rest of the NPRA when you say it's time to start planning there. 015

To blithely dismiss whole-NPR-A planning because it "would take much more time and effort"(NPR-A Report, Issue I, March 1997) is unconscionable, especially when Deborah Williams said ominously, " . . . the planning area does not capture the entirety of the industry's interest in NPR-A. As soon as the dust settles, whether we will offer another area for lease will be the next question." As to the prohibition on mineral extraction in the western NPRA, she continued " . . . we do know there are other minerals in the NPR-A, so we

Alaska Journal of Commerce, 5/5/97

expect [the closure on minerals] to change in time." (JOC-5/4/97) Clear that planning will occur in other areas. 015

Assumption of No Roads

This is either a huge oversight or it's a joke. If you were serious about oil development being achieved without roads, you would have made a stipulation concerning the prohibition of roads--at least a road connecting NPR-A to Kuparuk. 016

By assuming roadless development, you have ducked some important questions for mitigating/protecting values.

"This concept of roadless development" is a new concept (EIS, IV-A-11) that has no history by which to judge it. Alpine and Badami are the poster children of roadless development. They are small fields which could not alone bear the cost of gravel road construction. But they could bear the cost of a pipeline, the most important aspect of commercial expansion: infrastructure. It being in place, they can bring other fields on line, at which point a road may be required. ARCO's expert Mike Joyce reminds us that "The current assumption is that sales-oil pipelines from NPR-A would not have associated roads, but this would have to be decided on a case-by-case basis. Eventually there could be a threshold number or size of fields when roads to the oilfields are less disturbance than the alternatives." (Proceedings of the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop, p.5)

With Alpine's operating record not even in the making yet, it would be prudent to wait until Alpine is up and running to see how roadless development works, how the Alpine Subsistence Oversight Panel works (as a model for NPR-A oversight).

Failure to characterize oil industry

Understanding the beast leads to proper handling. Understanding the beast also brings light to the question of whether or not there need to be lease sales in the NPR-A. I don't know what more I can do to illustrate a healthy, adaptive and well-fed beast that does not need to be fed more just yet. 017

Ken Thompson's "No decline after '99" sums it up: the outlook on the North Slope is brighter now than it has been in years. Publications have variously portrayed the fortune of the North Slope oil patch as in a "Resurgence" (Alaska Journal of Commerce, 5/5/97), a "Boom" (Daily News Miner, 1/19/97) upon which investors are "Bullish" (The Alaska Oil and Gas Reporter, 2/17/97.)

Two brand new developments could have far-reaching consequences, whether your interest is the North Slope's ecology or Alaska's economy. Alpine is a thirty mile leap to the west and Badami is a thirty mile leap to the east. Each is a large enough field to carry the cost of the infrastructure for future development in their respective "wings" of the North Slope. (The Alaska Oil and Gas Reporter, 1/30/95. "Badami's Success Critical: Field could open the door for future marginal field developments in Alaska"). It's one step at a time in a lucrative business.

017

Another trend is offshore. Sale 86 produced surprising industry interest and a fair chunk of change. Patrick Coughlin, deputy director of DOG said the sale results seem to bear out a recent trend of oil companies moving offshore in their Arctic exploration efforts as technology enables them to lower costs. The Alaska Oil and Gas Reporter, 11/24/97. "North Slope: State Lease Sale 86 has a surprisingly strong showing from industry"; Alaska Journal of Commerce, 10/30/97. "Tear-round oil production in Beaufort Sea possible")

The oilpatch renaissance is due, in large part, to a retrenchment in the industry itself. Among other advances, North Slope operators have reduced overall costs and reduced their cost of barrel of oil produced. And with new technologies and new applications of old technologies, things unthinkable a decade ago are coming to pass. (The Alaska Oil and Gas Reporter, 2/19/96. "Technology: The Race to Drill Coiled-Tube Wells"; The Alaska Oil and Gas Reporter, 3/18/96. "Productivity: North Slope Drilling Costs Come Down")

For years, industry considered West Sak uneconomic, infpossible to produce. BP poured millions into Schrader Bluffs even though the wells weren't economic. ARCO is now using frac dogs to tap the giant 3 bbo West Sak with an initial 50-well phase to be followed by hundreds. "Tiny Tools" (ADN 12/14/97 "Industry taps new fields, reaches deeper into old pools") make remote fields economical and help lower the minimum onshore field size from 300 to 125 mbo (The Alaska Oil and Gas Reporter, "North Slope Report: ARCO Sees Bright exploration potential", 3/17/97). Taking a single technology as an example--just look at what coiled tubing has done--and its potential--since its consistent use on the Slope in 1993-1994.

Today, the "Slope promises exploration gems" (Alaska Journal of Commerce 7/7/97). BP Exploration will increase its Alaska capital spending by one billion dollars, or 30%, over the next five years; ARCO, 500 million dollars, or 41%, over 5 years (JOC 1/20/97). Governor Knowles believes this increase in spending will "help stabilize oil production and state revenues in the future [and] it means more jobs for Alaskans" The Editor of the Alaska Journal of Commerce (JOC,1/27/97) projects these investments translate into 25 million in new revenue to treasury in 2000 and 225 million by fy2005. And translates into 25,000 barrels of additional oil by 2001 and up to 300,000 barrels of oil by 2005, which Bob Malone echoes with estimates of throughput rising from 1.35 to 1.5 million two years from now and be sustained for five. "I like what I'm hearing about the oil patch."

017

Overcautious Projections of Development

You were over-cautious in choosing which fields and projects would be included in the Cumulative Case analyses. You omitted a great many reasonable and foreseeable projects from your Cumulative Case, which made for a poor analysis.

Table IV.A.5-1 isn't worth the paper it's printed on. It's offensive, damn near malfeasant with intent to misinform. It doesn't even depict the Badami project, which is farther along than Alpine. Table IV.G.1 neither lists enough existing projects nor planned projects.

Your working definition for "reasonable and foreseeable" projects to be included in that analysis is basically good. As provided by Gene Terland: "anything that could be projected to be developed onshore and offshore during the life of the proposed planning effort (10-20 years)." The problem, then, must lie with application of that definition. To be of help in the application of "reasonable and forseeable" to projected development projects, I compiled the following list for consideration in all analyses into which it fits. All fields/projects other than Northstar will be enabled by the Badami or Alpine infrastructure . . . they are not " . . . a matter of extreme conjecture"(EIS, p. IV-A-38)

Colville River Unit--though still only a proposed unitization with DNR, the CRU contains 5,901 acres that ARCO and coattail independents leased from Kuukpik Village Corporation in Sale 86A. These lands are adjacent to Alpine and within the boundary of the NPR-A. These private lands can be accessed for development any time--even without the NPR-A being opened.

In addition, there are eight "satellite to Alpine" prospects within the Colville delta. There are three "discovery" wells, and five other wells that are "certified producers in paying quantity." (Mapmakers, 1997, AK. April, '97 Arctic Slope & Beaufort Sea, AK: Oil & Gas Activity)

Point Thompson--one of the "North Slope's most tantalizing petroleum prospects." More viable with extension of Badami pipe. Unhappy with Exxon's development plan, the State of Alaska is looking for ways to compel

Exxon to get active. Granted a six-month extension to file an acceptable development plan. (Daily News Miner, 12/18/97 "State Gives Point Thompson holders more time to file plan"; Daily News Miner, 12/16/97, "State prods Exxon to develop Slope oil field"). also, BP is doing the largest 3-D seismic survey ever on the North Slope (The Alaska Oil and Gas Reporter, 3/17/97)
Liberty--120 mbo that may be produced in 2.5 years if BP can meet cost targets. Contractors selected. (Anchorage Daily News 5/30/97; Alaska Journal of Commerce, 5/12/97)
Sourdough--100 mbo next to the Arctic Refuge that might be developed (Daily News Miner, 3/14/97)
Northstar--on its way pending resolution of lawsuit

Finally, "there are close to 50 known satellite prospects around existing producing fields . . . ." (The Alaska Oil and Gas Reporter, 3/17/97) with as much as 1 billion barrels of oil. Tarn, Sambuca and Midnight Sun are recent examples. (Daily News Miner, "Three Firms hit 'Significant' Oil Near Prudhoe", 2/14/97). 017

That concludes all the written comments I have time for. Please include them in the official public comment period for the NPR-A IAP/EIS.

Sincerely,

David van den Berg

1673-001
We are examining other management issues along with the possibility of oil and gas leasing to give consideration to the multiple resource potential for the area. Section I.A has been revised to clarify the purpose and need for this IAP/EIS. Also, please see Response 1851-002.

1673-002
For a discussion of the wilderness and/or National Wildlife Refuge protection issue, please see Response 1851-058. Section II.G gives the reasons why we have focused attention on a part rather than all of the NPR-A. We believe the development projections offered in Section IV.A are realistic and appropriate. The cumulative impact analysis has been expanded to include more existing and potential oil and gas developments on the North Slope.

1673-003
Please see Response 1851-054.

1673-004
Please see Response 1851-054.

1673-005
We believe that the schedule for producing the IAP/EIS has afforded adequate time to analyze the resources and uses of the planning area and the impacts future activities may have on them and to gather and consider public input.

1673-006
The commenter is correct that other NEPA documents relevant to activities in the planning area will tier off this IAP/EIS, and that future planning efforts in nearby lands should factor into their analysis the decisions and resultant developments in the planning area. We believe the current document is well grounded in scientific analysis and sufficient for sound decisionmaking.

1673-007
The IAP/EIS provides the documentation necessary to understand what areas are of particular concern. Based upon this documentation, the Preferred Alternative would, among other things, severely restrict oil and gas activities in habitat crucial to molting geese and calving caribou.

1673-008
The logistics for operations in the NPR-A will be very site-specific, and general considerations are discussed in Sections IV.A.1.b(2)d) and IV.A.1.b(4)(b). Presumably, a staging base will be constructed to support one or more oil field projects. The staging site likely will have an airstrip capable of handling large-capacity aircraft and, if on the coast, marine loading facilities. The actual location of the staging site cannot be determined until oil discoveries are made. It is impossible to accurately predict the scale of development in the NPR-A prior to an extensive exploration program to discover commercial-sized fields.

1673-009
Logistics for NPR-A exploration and development are described in Sections IV.A.1.b(2) and (4).

The potential effects of oil and gas exploration and development on wildlife habitat, subsistence, and recreational uses are analyzed in Sections IV.C, D, E, F, and G for Alternatives B through E and the Preferred Alternative, respectively, and in Section IV.H for the cumulative case.

1673-010
We believe the protections offered in various alternatives, including the Preferred Alternative, provides a range of protections for the area's surface resources. Also, please see Response 1851-058 for a discussion of the inappropriateness of wilderness designation or inclusion in a National Wildlife Refuge.

1673-011
The alternatives represent a wide range of areas that might be made available for oil and gas leasing. The Preferred Alternative leaves much of the Teshekpuk Lake Special Area unavailable for leasing and prohibits or severely limits surface occupancy in much of both Special Areas in the planning area. We have tried to identify and to protect the important surface values, including those on lands considered of high oil and gas potential. We do not believe it prudent to withhold from leasing lands whose surface resources do not merit special protection efforts simply because they do not appear to have high oil and gas value.

1673-012
Please see Response 1851-058 for a discussion of the inappropriateness of wilderness designation or inclusion in a National Wildlife Refuge. The Preferred Alternative offers a variety of surface occupancy prohibitions.

1673-013
The Visual Resource Management (VRM) System predates ANILCA and was used by the HCRS in conducting their visual resource inventory. Post-ANILCA reviews of the HCRS Scenic Quality evaluations have reaffirmed their findings. Also, it is important to understand that Scenic Quality determinations are not a test and are not the end product of the VRM process. The VRM System is an analytical process that identifies, sets, and meets objectives for maintaining scenic values and visual quality. The system is based on research that has produced ways of assessing aesthetic qualities of the landscape in objective terms. What had been considered extremely subjective (aesthetic judgement) was found to have identifiable, consistent qualities that could be described and measured. Whatever the terrain (and whoever the observer), the perception of visual quality in a landscape seems to be based on several common principles. Using these principles, scenic-quality ratings are determined based on seven key factors: (1) landform, (2) vegetation, (3) water, (4) color, (5) influence of adjacent scenery, (6) scarcity, and (7) cultural modification. A standardized point system assigns great, some, or little importance to each factor. The values for each category are calculated and, according to total points, one of three scenic-quality classes are determined. The scenic quality for an area is then combined with two other determinations, also made as part of the inventory/evaluation phase of the VRM process (i.e., distance zone and sensitivity level), to identify Visual Resource Management Classes. The VRM Classes are used to define minimum management objectives and to describe the degree of modification allowed in a landscape to retain its character.

1673-014
Because wilderness designation is inappropriate for consideration for the NPR-A, a symposium on wilderness would not be fruitful. It should be noted that the Preferred Alternative directs BLM to conduct a management plan for the Colville River Special Area. One of the resource uses to be considered is recreation. While this will not consider wilderness or similar designations, it will address managing the remote recreation values of the Colville drainage.

1673-015
Please see Response 1673-002.

1673-016
The concepts behind the "roadless" development assumption are explained in Response 1851-011.

The Preferred Alternative prohibits gravel roads connecting to a road system outside the planning area (see Preferred Alternative Stipulation 48).

1673-017
We have no disagreements with your comments regarding the oil industries increased activity on Alaska's North Slope. However, expectations often do not meet realities. Regarding comments on the treatment of the cumulative case in the EIS, we have added a significant amount of additional information. Several tables have been added to Section IV.A.5 that describe in more detail projects that are "reasonable and foreseeable."

ALASKA STATE LEGISLATURE

1674

Official Business

Office Of The President

State Capitol, Room 107
Juneau, AK 99801-1182
(907) 465-4976

March 12, 1998

Mr. Gene Terland, NPR-A Project Coordinator
Bureau of Land Management
Alaska State Office
222 West 7th Avenue
Anchorage, Alaska 99513

Dear Mr. Terland:

We the undersigned members of the Alaska State Senate support Alternative E in the Draft Environmental Impact Statement for the NPR-A Northeast Corner. The NPR-A was originally established as an oil reserve. Consequently, all BLM lands in this area should be made available for oil and gas leasing.

Alternatives A through D do not allow access to the critical Barrow Arch, the area with the greatest potential for hydrocarbon discovery. Unless this access is granted, we feel interest in the upcoming NPR-A lease sale will wane.

We believe technological and operational advances in the exploration, production and transportation of hydrocarbons in the arctic, as proven over the last 20 years, will allow operators to meet Alaska's high standards for the protection of habitat and wildlife.

Alternative E allows for the highest and best use of the NPR-A. Thank you for considering our comments.

Sincerely,

Senator Mike Miller
Senate President

Senator Robin Taylor
Senate Majority Leader

Terland
March 12, 1998
Page 2

Senator Drue Pearce, Co-Chair
Finance Committee

Senator Rick Halford

Senator Loren Leman

Senator Terry Mackie

Senator Sean Parnell

Senator Jerry Ward

Senator Tim Kelly, Chair
Senate Rules Committee

Senator Bert Sharp, Co-Chair
Finance Committee

Senator Dave Donley

Senator Lyda Green

Senator John Torgerson

Senator Gary Wilken

1675

March 12, 1998

Mr. Gene Terland
NPRA Planning Team
Bureau of Land Management
222 West 7th Avenue
Anchorage, AK 99513-7599
<jducker@ak.blm.gov>

NPRA Planning Team:

We oppose oil leasing in the National Petroleum Reserve in Alaska at this time.

There is no compelling reason to lease any part of the western Arctic for oil drilling at this time. When the Reserve was established in 1923, it was intended to be tapped only at a time of pressing national need. While politicians and oil companies argue that the nation "needs" this oil, millions of barrels are being shipped to Asia, world oil prices are falling, US automobile fuel efficiency is declining, and the oil industry predicts central Arctic production to increase in the next five years. 001

We support the Northern Alaska Environmental Center's Conservation Alternative. Although the entire 4.6 million acre planning area qualifies for wilderness designation, at the very minimum, the Environmental Impact Statement (EIS) should recommend that Congress grant permanent wilderness protection to the Colville River and Teshekpuk Lake Special Areas and that these areas be transferred to the US Fish and Wildlife Service. 002

The draft EIS has several significant deficiencies, including a lack of adequate evaluation of direct, indirect and cumulative impacts, or any consideration of impacts outside the region, most notably to subsistence hunters in Canada and Alaska who depend on the migratory bird resources of the Reserve for food. The inadequacies of the draft EIS are so great as to make it impossible to make a reasoned judgment about the effectiveness of opening the northeastern section of the Reserve to oil and gas leasing at this time. 003

None of the management alternatives presented in the draft EIS provide adequate protection for the unique wildlife and wilderness resources of the northeastern Reserve. No consideration was given to permanent protection for these resources and none of the alternatives prohibit placement of support facilities and transportation infrastructure anywhere in the northeastern section of the Reserve. 004

We think it is timely to evaluate the wildlife and wilderness resources within the Reserve outside the boundaries of the designated Special Areas, and give consideration to what levels of protection these resources may warrant. We disagree with the rationale the Bureau of Land Management (BLM) provided in the draft EIS for not considering any lands within the Reserve for designation as wilderness, and suggest that, while the Alaska Lands Act exempts these lands from mandatory requirements for wilderness review, the Secretary of the Interior has the discretionary authority to conduct such a review. We recommend that he do so without further delay.

In addition, a national energy policy is necessary to address concerns about global climate change and our national dependence on fossil fuels. Before tapping one of our nation's last petroleum reserves, the Clinton Administration should advance a national energy policy that encourages energy conservation, efficiency, and renewable sources. 005

Thank you for this opportunity to comment on the draft Environmental Impact Statement. Please include our comments in the official record.

Sincerely,

Northern Alaska Environmental Center [AK]
Sylvia Ward, Executive Director

GrassRoots Environmental Effectiveness Network
Roger Featherstone, Director

And...

Advocates Working for Animals and Respect for the Environment [SC]
Patricia H. Friedman, Co-Founder

Affinity, Ohio's Environmental Newspaper [OH]
Stefanie Mugridge

Alabama Trails Association, The [AL]
Jay Hudson

Alaska Coalition of Maryland [MD]
Paul Torrence

Alaska Community Action on Toxics [AK]
Pamela K. Miller, Project Director

Alaska Wildlife Alliance, The [AK]
Stephen Wells

Aldo Leopold Chapter of the Society for Conservation Biology [WI]
Kelly Kearns

Alliance for the Wild Rockies [MT]
Mike Bader, Executive Director

American Bird Conservancy
Gerald W. Winegrad, Vice-President for Policy

American Council for an Energy-Efficient Economy
Martin Thomas

Animal Defense League of Arizona [AZ]
Lisa Markula

Arizona Bear Coalition [AZ]
Ben Watkins

Arizona Defense Council [AZ]
Carmine Cardamone

Audubon Council of Pennsylvania [PA]
Candy Dunn

Audubon Council of Texas [TX]
Carole Wilmoth, Conservation Chair

Audubon Society of Corvallis [OR]
Mary Derr, Chair, Conservation Committee

Audubon Society of Greater Cleveland [OH]
Daniel H. Melcher, President

Audubon Society of New Hampshire [NH]
Julian Zelazny

Baltimore Zoo [MD]
Liza Herschel

Bay Area Action [CA]
David T. Smernoff, Council Chair

Burrough's Chapter of the National Audubon Society [MO]
Karen Uhlenhuth

Californians for Quality of Life [CA]
Carolyn Chase

Carthage United to Rescue the Earth [WI]
Chandra LeGue

Cascadia Forest Alliance [OR]
Mark Des Marets

Center for Environmental Citizenship [NY]
Matteo Burani

Center for the Conservation of Biodiversity [CA]
Catherine Rich

Central Cascades Alliance [OR]
Jay Letto, President

Central New Mexico Audubon Society [NM]
Jeffrey D. Myers, President

Central Sierra Environmental Resource Center [CA]
John Buckley, Executive Director

Chattooga River Watershed Coalition [GA]
Nicole Hayler

Christian Environmental Association
Nicole Holt, Campus Programs Director

Citizens Against Cook Fighting [AZ]
Jessica Massey

Clearwater Biodiversity Project [ID]
Charles Pezeshki, Director

Coalition for Forests [NY]
Stephen Chamuth, Director

Cold Mountain, Cold Rivers [MT]
Storm Waters

Conservation Science Institute [VA]
John R. Cannon, Ph.D., Director

Cook Inlet Keeper [AK]
Bob Shavelson, Executive Director

Cumberland Countians for Peace & Justice [TN]
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Deerlodge Forest Defense Fund [MT]
Paul Richards, Member Steering Committee

Delaware-Otsego Audubon Society [NY]
Andrew Mason, Conservation Chair

Detroit Audubon [MI]
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Earth Action Network [CA]
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EarthLaw [CO]
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Ecology Center, The [MI]
Timothy Beichtold, Program Director

Endangered Habitats League [CA]
Dan Silver, Coordinator

Endangered Species Coalition
Brock Evans, Campaign Director

Environmental Action [IN]
Frank Ambrose

Environmental and Cultural Conservation Organization [AZ]
William "Sky" Crosby, Director

Environmental Association of St. Thomas – St. John [VI]
Keith Richards, President

Environmental Consumer Organization – Illinois Wesleyan University [IL]
Amy Farrell or Teri Allen

Environmental Consumer Organization [IL]
Rod Flora

Environmental Law Caucus – Lewis & Clark School of Law [OR]
Sabrina Venskus

Environmental Law Foundation [CA]
Tara Mueller

Environmental Law Society – Boalt Hall School of Law [CA]
Brent Plater

Environmental Protection Information Center, The [CA]
Paul Mason, President

Environmental Science Classes – Thomas Edison High School [OR]
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Federal Land Action Group [NY]
Mark Goldberg, Director

Forest Action [MN]
Bill Busse

Forest Guardians [NM]
John Fleming, Watershed Protection Program

Free The Planet!
Loren Finkelstein & Mollee Lamoray

Fresno Audubon Society [CA]
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Friends of Nevada Wilderness [NV]
Tom Myers

Friends of the Clearwater [ID]
Gary Macfarlane

Friends of the Earth
Gawain Kripke, Director, Appropriations Project

Friends of the Neacopeak [PA]
Dave Magill, President

Friends of the West [ID]
Dave Richmond, Secretary

Friends of Wetlands [OH]
Kate Pilarsky

Global Response [CO]
Paula Palmer, Executive Director

Greater Wyoming Valley Audubon Society [PA]
Alan C. Gregory, Conservation Chairman

Greater Yellowstone Coalition [MT]
Tim Stevens, GYC Program Staff

Green Party of Arkansas [AR]
Al Brooks

Healthy Oceans Healthy Earth [VA]
Lee Sonne, President

Help Abolish Leghold Traps [AZ]
Mary Schanz

Highland Community College – Dept. of Sociology and Anthropology [KS]
D.J. Champagne, ADD

Huron Friends of Wetlands [OH]
David DiDillio

International Primate Protection League [SC]
Dr. Shirley McGreal

John Muir Project of Earth Island Institute [CA]
David Orr

John Wesley Powell Audubon Society [IL]
Angelo Capparelle, Conservation Chair

Johnson County Songbird Project [IA]
Jim Walters

Justice, Peace & Integrity of Creation Ministry [TN]
St. Mary's Catholic Church

Kalmiopsis Audubon Society [OR]
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Christopher Colonna, Conservation Co-Chair

Kansas University Environs [KS]
Andrea Repinsky, Co-coordinator

Kentucky Citizens Accountability Project [KY]
J. W. Roberts, Executive Director

Kettle Range Conservation Group [WA]
Tim Coleman, Director

Klamath Forest Alliance [CA]
Lori Cooper, Forest Protection Coordinator

Klamath Siskiyou Wildlands Center [OR]
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KOLA (Keep Our Lakota Aware) (Brussels, Belgium)
Elkie Eerten, Executive Director

KOLA (Keep Our Lakota Aware) [SD]
Phyllis Bald Eagle, Assistant Director

Ladue Garden Club [MO]
Jane Madel, Chair of National Affairs and Legislation Committee

League of Women Voters of the Virgin Islands [VI]
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Living Education Center for Biology and the Arts [VA]
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Maryland Sierra Student Coalition [MD]
Eric Luedtke, Chair

Mexican Wolf Coalition of Texas, The [TX]
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Morton Arboretum, The [IL]
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Mountain Defense League [CA]
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Native Forest Network
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New Mexico Sportsmen's Association [NM]
Oscar Simpson

New Mexico Wilderness Alliance [NM]
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Northeast Environmental Center [CA]
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Northeast Ohio Greens [OH]
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Northeast Pennsylvania Audubon Society [PA]
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Northern Flint Hills Audubon Society [KS]
Christopher Coltenos

Northern Thunder [WI]
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Northwest Ecosystem Alliance [WA]
Mitch Friedman

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Ouachita Watch League [AR]
Vernon Bates,Chair

Ozark Watch League [MO]
Charles Phillips, Coordinator

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Bernita Hoke, Executive Director

People for Animals in the Prevention of Cruelty and Neglect, Inc. [AZ]
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Planning and Conservation League [CA]
Gary A. Patton, General Counsel

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Paul Ketchum, Conservation Director

Prairie & Timbers Audubon Society [TX]
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Prairie Dog Pals [NM]
Ana Davidson

Prescott Forest Friends [AZ]
Jim Powers

Princeton Environmental Action [NJ]
Ben Ruddle

Puget Sound Urban Wildlife Photography Club [WA]
Patricia A. Sunny Walter

Range Watch [CA]
Jane Baxter

Republicans for Environmental Protection – Georgia Chapter [GA]
Sam Boehler

Rivers Alliance of Connecticut, Inc. [CT]
Sarah Faulkner Loff

Rogue Valley Audubon Society [OR]
Pepper Trail, Conservation Chair

San Diego Audubon Society [CA]
Norma Sullivan, Land Use Conservation Chair

San Pedro 100 [AZ]
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Save the West, Inc. [CO]
James Mentzelt, President

Save Wetlands and Bays [DE]
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Scott County Organization to Protect the Environment [AR]
Janet Kyriakides

Seattle Audubon Society [WA]
Chuck Lennox

Seattle Chapter of the Fellowship of Reconciliation [WA]
Scott Sheridan

Shenandoah Ecosystems Defense Group [VA]
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Sierra Club, Blue Ridge Group [VA]
Jim Troy, Chair

Sierra Club, Broward County Group [FL]
Neil Sloan, Conservation Chair

Sierra Club, Central New Mexico Group [NM]
Martin Heinrich

Sierra Club, Delaware Chapter [DE]
Jim Steffens, Chair

Sierra Club, Savannah River Group [GA]
Frank Carl, Chair

Sierra Club, Houston Regional Group [TX]
Frank Blake, Chair

Sierra Club, Iowa Chapter [IA]
John Moreland

Sierra Club, John Muir Chapter [WI]
Tom Herschelman Biodiversity Chair

Sierra Club, Kankakee Group [IL]
Carolyn Kehoe or Jack Norman

Sierra Club, Loma Prieta Chapter [CA]
Ed Smith, Chair, Wildlife Committee

Sierra Club, Lowcountries Group [FL]
Lisa Hartley, Public Lands Issue Chair

Sierra Club, Miami Group [FL]
Alan Farago, Conservation Chair

Sierra Club, Moshannon Group of Central Pennsylvania [PA]
Keith Nelson, Vice Chair

Sierra Club, New Hampshire Chapter [NH]
Jeanne Bakes

Sierra Club, New Jersey Chapter [NJ]
Dennis W. Schwejda, Conservation Chair

Sierra Club, Northeast Ohio Group [OH]
Brian Uhl, Conservation Chair

Sierra Club, Oregon Chapter [OR]
Charlie Ringo, Conservation Chair

Sierra Club, Pennsylvania Chapter [PA]
Mike Shiloh, Chair

Sierra Club, Northeast Group [PA]
Ed Zygmont, Group Secretary

Sierra Club, Rhode Island Chapter [RI]
Donald P. Wagner, Co-Chair

Sierra Club, Southern Maryland Group [VA]
Frank Fox

Sierra Club, Southern New Mexico Group [NM]
Cheryll Bilerus, Vice Chair

Sierra Club, Southwind Group [KS]
William C. Skoer, Publicity Chair

Sierra Club, State of Franklin [TN]
Leah C. Mohon, Chair

Sierra Club, Harvey Broome Group [TN]
Kenneth S. Warren, Corresponding Secretary

Sierra Club, Utah County Group [UT]
Samuel R. Bradforth, Ph.D., Conservation Chair

Sierra Club, Virginia Chapter [VA]
James F. Wright, Chair

Sierra Student Coalition
Sage Rosenzweig, National Director

Sinapu [CO]
Rob Edward, Acting Executive Director

Sky Island Alliance [NM, AZ]
Jack Humphrey

Sky Island Watch [AZ]
Dave Hodges

Society Advocating Natural Ecosystems [OR]
Daniel Ferguson, Executive Director

South Carolina Forest Watch [SC]
Hutch Clay

Southwest Center for Biological Diversity [AZ, NM, CA]
Robin Silver, MD, Conservation Director

Southwest Forest Alliance [AZ, NM]
Marion Hoffman, Executive Director

State Naturalist for Tennessee
Mack Pritchard

Student Environmental Action Coalition – Illinois State University Chapter [IL]
Angelo Capparella, Faculty Advisor

Student Environmental Action Coalition – Louisiana State University [LA]
Deb Landau, President

Student Environmental Action Coalition – Southwest [AZ]
Ann Carl

Student Environmental Action Coalition – University of Delaware [DE]
Vanessa Maria Serrao

Student Environmental Action Coalition – University of Idaho [ID]
Greg Mullen, President

Student Environmental Council – Iowa State University [IA]
Summer Lane

Students for the Ethical Treatment of Animals – Humboldt State University [CA]
Monica Engebretsen

T&E, Inc. [NM]
Tom Wootton

Take Action Against Lawless Logging [OR]
Alexis DeCiapio

Tampa Audubon Society [FL]
Daniel M. Sawyerson, M.S., President

The Wildlife Society – Iowa Chapter [IA]
Dr. James Pease, President

Union of American Hebrew Congregations
Heather Kaplan

United Church of Christ – Network for Environmental & Economic Responsibility
Donald B. Clark

University of New Mexico Biology Club [NM]
Christy Tarleton, President

University of New Mexico Sierra Student Coalition [NM]
Julia Raymond

US Public Interest Research Group
Kim DeMino

Vegetarian Resource Group of Tucson [AZ]
Deborah Mitchell

Virginia's 10th District Environmental Council [VA]
Steve Parks

Virginians for Wilderness [VA]
Ernie Reed, President

Wachiska Audubon Society [NE]
Ken Reiton

WashPIRG [WA]
Parker Blackman, Executive Director

Web of Life Audio [ME]
Traci Hickson

West Virginia Environmental Council [WV]
Jim Kotcon

Western Ancient Forest Campaign
Steve Holmer, Campaign Coordinator

Western Endangered Species Alliance [WA]
Melanie Mayock

Western North Carolina Alliance [NC]
Matt Dietz

Wetlands Preserve [NY]
James Hansen, Environmental Director

Wildlands Center for Preventing Roads [MT]
Bethanie Walder, Director

Wildlands Project, The
Rod Mondt, Program Manager

Wildlife Center of Virginia [VA]
Edward B. Clark, Jr., President

Wildlife Damage Review [AZ]
Nancy Zarenburg

Wisconsin Forest Conservation Task Force [WI]
Don Waller

Wisconsin Secretary of State
Doug LaFollette

Women's Voices for the Earth [MT]
Bryony Schiman

Worldview [NH]
John W. Friede, Executive Director

Wyrnote Audubon Society [PA]
Janet Sturwood, Conservation Co-Chair

Wyoming Outdoor Council [WY]
Dan Heilig, Associate Director

1675-001
Current legislation authorizes use of the NPR-A to meet the Nation's energy needs. The statute does not require an immediate need. For a more complete response, see Response 1851-002.

1675-002
See Response 1851-058.

1675-003
Please see Response 1314-004 for a discussion of impacts to subsistence hunters of migratory waterfowl outside the Northeast NPR-A Planning Area.

1675-004
For a discussion of permanent protection measures, please see Response 1851-058. In crafting the Preferred Alternative, BLM has prohibited permanent oil and gas occupancy in a substantial portion of the planning area. This alternative also forbids exploratory well drilling in the same area.

1675-005
Development of a national energy policy is beyond the authority of the BLM. However, development of the oil and gas resources of the NPR-A is consistent with the Department of Energy's recent draft Comprehensive National Energy Strategy. For more on the Department of Energy's views on NPR-A's role in addressing the Nations energy needs, see their comment letter printed elsewhere in this chapter.

1686

ALASKA MINERS ASSOCIATION, INC.
501 W. Northern Lights Blvd., Suite 203, Anchorage, Alaska 99503 FAX: (907) 276-7997 Telephone (907) 276-0047

March 12, 1998

Mr. Gene Terland
Bureau of Land Management
NPRA Planning Team
222 W. 7th Ave. #13
Anchorage, AK 99513-7599

FAX 907-271-5479

RE: NPR-A Draft Integrated Activity Plan/EIS

Dear Mr. Terland,

Thank you for the opportunity to comment on the Draft Integrated Activity Plan/Environmental Impact Statement for the National Petroleum Reserve - Alaska. The Alaska Miners Association (AMA) is a mineral industry support membership organization with about 1000 members throughout Alaska.

The AMA urges the BLM to select Alternative E as its Preferred Alternative but with several important changes. The AMA supports leasing of the entire study area with stipulations that will still address the waterfowl and wildlife issues that have been raised. NPR-A was established as a petroleum reserve and it has been reserved for the purpose of mineral development. NPR-A should now be opened to oil & gas leasing and managed in that way.

The following changes should be made to Alternative E:

1. No new Conservation System Units (CSUs) should be included. ANILCA, in SEC.101(d), specifically states that all of Alaska had been evaluated and that the need for further CSUs or any other set-asides "...has been obviated hereby." The total area of Alaska is about 365 million acres. With the passage of ANILCA a total of 215 million acres is now in Congressionally designated parks, refuges, monuments, wild & scenic rivers, etc. That 215 million acres is equal to the total combined area of the states of New York, New Jersey, Pennsylvania, West Virginia, Ohio, Indiana, and Illinois.

2. In particular, new or expanded "Special Areas" should not be included. The stipulations and the permitting processes include numerous provisions to safeguard the environment, waterfowl, and wildlife. Exclusion of leasing through the designation of Special Areas" is not necessary and would greatly harm the economic potential and viability of the area.

3. Also, new designations as Wild & Scenic Rivers should not be included. Much of the Colville River is navigable. This means that the State of Alaska controls the river and that the BLM controls only the uplands. If the Colville were designated, it would not be a Wild & Scenic River but rather two W&S uplands on either side of the State's river. If the river were designated W&SR, management of the area would be greatly complicated with the State having one set of management objectives while the BLM would be forced to manage as W&SR. There would also be areas where BLM would own only one of the upland banks and management would become even more complicated and costly for BLM, the State and industry. Experience in Alaska has shown that W&SR designation is used by groups opposing development to block and harass any development projects in the vicinity and we urge that no designations be made in the National Petroleum Reserve.

4. The Teshekpuk Lake Special Area should not be removed from leasing. Stipulations and permit requirements will allow protection of the waterfowl and wildlife and their habitat while at the same time allowing access around the area and drilling under the area. Closing this entire area would block access to some of the lands having the highest potential for holding commercial quantities of oil and gas. The State and the industry have proven that they can develop oil and gas resources without adversely impacting the wildlife.

5. One major concern for the caribou is the need for areas where they can get into the breezes and away from insects. As has occurred elsewhere on the North Slope, this can be accomplished by building gravel drilling pads. This benefit for the caribou should be added to the documents. 001

Thank you again for the opportunity to comment on this important issue.

Sincerely,

Steven C. Borell, P.E.
Executive Director

cc: Senator Ted Stevens
Senator Frank Murkowski
Congressman Don Young
Governor Tony Knowles

1686-001
The IAP/EIS recognizes that gravel roads and pads provide caribou with additional insect-relief habitat (see Sec. IV.C.9.a.(b)(1).

The Ornithological Council

PROVIDING SCIENTIFIC INFORMATION ABOUT BIRDS

1696

10 March 1998

NPR-A Planning Team
Bureau of Land Management
Alaska State Office
222 W. 7th Avenue, #13
Anchorage, AK 99513-7599

RECEIVED

Dear Planners,

The Ornithological Council would like to comment on the Northeast National Petroleum Reserve-Alaska Draft Integrated Activity/Environmental Impact Statement. The Ornithological Council is a non-profit organization formed by seven scientific ornithological societies to provide timely information about birds to help ensure scientifically-based decisions, policies, and management actions. These societies - the American Ornithologists' Union, the Wilson Ornithological Society, the Cooper Ornithological Society, the Raptor Research Foundation, the Pacific Seabird Group, the Colonial Seabird Group, and the Association of Field Ornithologists - represent more than 7,000 members.

American Ornithologists' Union
Association of Field Ornithologists
Colonial Waterbird Society
Cooper Ornithological Society
Pacific Seabird Group
Raptor Research Foundation
Wilson Ornithological Society

Of particular concern to the ornithological community is the presence of numerous bird species, many in substantial numbers. This is a very important area for birds and other biota and there is a potential for significant negative impact on the wildlife if development is not planned and implemented carefully and based on the best science and technology. Among the birds found in the NPR-A are the Spectacled Eider and Steller's Eider, which, as your own summary notes, both appear on the Endangered Species list. The Bar-tailed Godwit, which has few nesting sites in North America, nests here. The Yellow-billed Loon nests only in this region. Many waterfowl summer in the area, at a time when they are undergoing their annual molt in preparation for migration. The Colville River Special Area has been recognized as one of the most significant regional habitats for raptors in North America. Gyrfalcons have no other nesting area in the United States. The downstream segment of the river that is being considered for oil and gas leases is the segment in which the highest density of raptors is found, with about half the nesting pairs of Peregrine Falcons, Gyrfalcons, and Rough-legged Hawks found along this stretch of the river

Our primary concern is that not enough is known about the abundance and distribution of the wildlife in the region, the habitat needs of those species, and the possible effects of the levels of human presence accompanying each of the Proposed Alternatives. Therefore, it is premature to choose among these alternatives. If there is not an urgent need to develop the petroleum reserves in this region, then the BLM has the opportunity to develop and obtain sufficient information to craft a management plan that will afford the greatest protection to the environment if and when gas and oil extraction activities do take place. We urge that the BLM postpone the selection of a management plan until basic surveys and research have been completed. If the BLM can not postpone the selection of a management plan, then we believe that the scientific evidence supports the selection of Alternative A.

001

Although the BLM is no doubt already aware of the ecological and biological value of the reserve, we would like to emphasize the fact that there is no protected area in Alaska for the foothill tundra and wet tundra of this low-lying coastal region. Its value is further enhanced by the fact that it is a nearly undisturbed, continuous area. Habitat fragmentation has been identified as a major cause of species decline and disruption of ecosystem function, so the importance of large, continuous land areas can not be overlooked. The draft EIS does not adequately describe the unique ecological and biological value of the area.

002

Decisions that could cause irreparable damage to the environment and the species found in the NPR-A should not be made without adequate scientific information. It is our understanding that some of this information is not available. For instance, the annual waterfowl survey covers only 2% of the region. Literature on the response of bird populations to various types and levels of development and the results of similar activity in the Prudhoe Bay should be studied. In his letter of 20 February 1998, Tom Cade, Ph.D., notes that the EIS does not discuss the impact of ground and air traffic disturbance on nesting raptors, despite the fact that the literature is readily available. The impact of leasing activity extends beyond the actual surface disturbance to the tundra. The human activity that necessarily accompanies the presence of oil and gas wells will also affect the environmental and the wildlife of the region. The BLM analysis of the environment does not seem to have included a thorough review of the research program conducted by the Naval Arctic Research laboratory at Barrow.

003

Any plan to allow development of this region should include very specific safeguards to protect the environment and the wildlife found there. Such safeguards can only be designed appropriately with the use of scientific information. We urge the BLM to consider carefully the detailed suggestions made by Dr. Cade, in implementing any of the Alternatives. Limitations on the use of motor vehicles and aircraft and restrictions on permanent roads and human habitation should be included in any management plan. The modifications suggested by Dr. Cade with regard to buffer zones and pipeline locations should be applied to the nesting areas of all species.

The Ornithological Council thanks the BLM for the opportunity to comment on this matter and for considering the views and concerns of the scientific ornithological community.

Sincerely,

DBlockstein

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1696-001
We agree that there is always more to be learned about our Nation's natural resources, including the resources of the North Slope. We do, however, believe there is adequate data collected over at least the last several decades to make responsible management decisions. For more on the efforts we have made to assure that we have taken into account the relevant scientific studies, see Response 1851-006.

1696-002
Some language has been added to Sections III.A.1.b and III.B.1 to give greater emphasis to the significance of certain habitat types in the planning area.

1696-003
The Fish and Wildlife Service, Migratory Bird Management, samples Arctic Coastal Plain waterfowl and other waterbird populations through the annual breeding pair aerial survey. The sample is sufficiently large for determination of population status and trends on which management decisions are based. A discussion of the effects of disturbance on peregrine falcons based on results of several studies has been added to Section IV.C.8. While the output from the Naval Arctic Research Laboratory certainly comprises one of the most important arctic databases, relatively few of the publications (Gunn, 1973) are pertinent to the planning area, and many present more detailed information on ecology, physiology, and behavior of birds than is appropriate for inclusion in this EIS. Appropriate references have been added to Section III.B.4.c.

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In this issue

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Volume 19, Number 1 ★ March 1998

ARCO CAP REPORTS

CIVIC ACTION PROGRAM NEWSLETTER

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CAP alert

Bureau of Land Management Needs to Hear from You on Plan to Conduct Leasing in the National Petroleum Reserve-Alaska

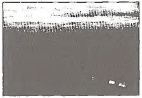
Late last year, the federal Bureau of Land Management issued a draft environmental impact statement proposing to resume oil and gas leasing in a portion of the National Petroleum Reserve-Alaska (NPR-A). The reserve, which includes 23 million acres on Alaska's North Slope, lies directly west of ARCO Alaska's Alpine development and the Kuparuk River field. *(See map on page 2.)*

This proposal is extremely important to our country's energy security. In addition, the opening of this land to oil and gas leasing has important implications for ARCO Alaska, Inc. For these reasons, ARCO CAP members in all states are strongly encouraged to communicate their views on the National Petroleum Reserve-Alaska to the Bureau of Land Management before the deadline for public comment on Thurs., March 12. *(The address appears on page 3.)*

U.S. reliance on foreign oil, which is always subject to disruption caused by political and economic problems abroad, is now over 50 percent. To ensure the country's energy security, we must increase the domestic production of oil and gas.

The National Petroleum Reserve-Alaska offers an opportunity to protect the economy and provide an essential, prudent margin of energy security for the country's future. This land was, in fact, set aside in 1923 for the purpose of petroleum development. *(See related article on page 2.)* The area offers enormous potential as a source of domestic

National Petroleum Reserve *continued on page 2*



Divorcement Surfaces Again in California

In January of this year, the San Diego County Board of Supervisors passed a retail divorcement measure banning refiner-operated gasoline stations. In order to take effect, the ordinance required passage of similar measures by cities representing two-thirds of the county's population. In early February, the City of San Diego and several other municipalities took the first step in doing just that—approving the ordinance, pending a final reading. This all but assures the county's population requirement.

The divorcement measure, which was the subject of a recent CAP Alert sent to San Diego CAP members, has far reaching implications. In addition to eliminating ARCO's ability to operate its stations, the ordinance includes provisions for modified open-supply, permitting retailers to purchase supply from any terminal offering the same brand, despite contract agreements. The measure also requires uniform pricing, which eliminates ARCO's ability to respond to local competition.

Readers of *CAP Reports* will recognize retail divorcement as an issue that comes up on a regular basis. In most cases, ARCO has successfully opposed divorcement legislation, both at local and state levels. The company contin-

Divorcement *continued on page 3*

About the NPR-A

In 1923, the federal government created the Naval Petroleum Reserve Number 4, commonly called Pet-4, as a defense measure.

To address concerns about the future supply of oil for the Navy, the government withdrew the area, which includes 23.5 million acres on Alaska's North Slope, from development under mineral laws.

For the next half century, only the Navy and the U.S. Geological Survey were permitted to conduct petroleum exploration of the region. Most was done in connection with World War II—with 66 test wells drilled between 1944 and 1953 and another round following the OPEC oil embargo in 1972.

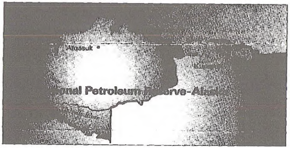
By the mid-1970s, the Navy's need for oil was dwarfed by that of the U.S. as a whole. In 1976, Pres. Gerald Ford approved legislation to develop Pet-4 and other naval petroleum reserves "in a manner consistent with the total energy needs of the nation." This law [illegible]

National Petroleum Reserve *continued from page 1*

energy. Because of today's lower development and operating costs, as well as recent improvements in exploration and production technologies, the area offers important new opportunities for ARCO Alaska, Inc., and other oil companies.

ARCO supports Alternative E in the draft environmental impact statement. This would resume leasing in all impact statement for the National Petroleum Reserve-Alaska. As you know, the reserve was designated by Congress for petroleum development. In fact, 66 wells have already been drilled in the area.

- The Department of Interior has told us what to do to protect the environment in the planning area—and we can do it. Therefore, there is no rea-



of the 4.6 million acre planning area covered by this document; and the area represents roughly 20 percent of the entire petroleum reserve. Other alternatives in the statement would restrict access in ways that ARCO believes are unnecessary and counterproductive.

Company representatives have testified at public hearings in Alaska, Washington, D.C., and San Francisco and will submit extensive written comments. But grassroots communications, such as letters from ARCO CAP members, are critical to making sure the federal government understands our views.

Take a moment to contact the Bureau of Land Management. Please keep in mind the following:

- ARCO supports full leasing of the planning area as outlined in Alternative E of the draft environmental

son to exclude any land in the area from a lease sale. The draft environmental impact statement lists a series of safeguards and protective measures, including wildlife buffer zones, which assure environmental protection.

- We have proven that we can find, develop, and produce oil in a way that protects the involvement of the North Slope. Using new advanced technology, combined with extensive environmental protections, oil resources can readily be extracted throughout the planning area without harm to local fish and wildlife as confirmed by joint industry and government studies. And, development can occur without interruption of the traditional uses of the land by Alaska natives.

National Petroleum Reserve *continued on page 3*

Divorcement *continued from page 1*

ues to oppose this ordinance in San Diego and hopes to prevent its spread elsewhere.

This is a simple economic issue. ARCO opposes retail marketing divestment because we believe it is anti-consumer and anti-competitive. Dealers and independent retailers support divestment because they believe they stand to profit if large refiners like ARCO are prohibited from selling gasoline at company outlets.

Divestment supporters contend that refiner-operated stations drive prices down to force independent dealers out of business, leading to higher prices in the long term. We see it differently. It is our belief that a marketplace with free competition, including high-volume, low-priced company-operated stations, helps consumers and the economy.

In San Diego, proponents won public support in a media campaign citing an alleged 30-cent-a-gallon price spread between Los Angeles and San Diego counties. The actual daily average price spread in 1997, however, was under eight cents a gallon.

ARCO currently has 130 retail stations in San Diego County, 87 of which are company-operated. Under the new law, ARCO would be forced to "dealerize" or divest the 87 stations, resulting in the loss of jobs and benefits for employees of company-operated stations. In all, San Diego County currently has about 140 refiner-operated stations that would have to be divested, leaving dealers the only retailers.

ARCO does not believe the elimination of refiner-operated stations will reduce prices. Surveys show company-operated stations are priced slightly below dealer-operated stations. Thus, common sense tells us that the loss of competition from company-operated stations will lead to higher prices.

The open-supply provision of the ordinances could seriously change the system by which retailers get their gasoline and interfere with existing contracts. If retailers are permitted to get supply from any branded facility, shortages could occur.

The uniform pricing provision would force refiners to charge the same wholesale price to all stations supplied from the same terminal. This would make it impossible for refiners to meet local competition.

The Western States Petroleum Association (WSPA), on behalf of member companies including ARCO, filed a lawsuit in federal district court in San Diego challenging the legality of the divestment ordinances. We will keep you posted on the case.

We will also let you know if we need your help in contacting officeholders about this measure and other divestment proposals that may come up in our marketing areas. In Arizona, for example, lawmakers recently defeated a divestment bill in committee. We are closely monitoring that situation in case divestment is reintroduced.

National Petroleum Reserve *continued from page 2*

- Leasing must begin *now* within the National Petroleum Reserve-Alaska to protect the nation's energy and economic security a decade or more from now. U.S. domestic oil supplies are shrinking and production is at its lowest level in 40 years. Sustaining America's economic well-being, as well as providing an essential, prudent margin of energy security for the longer term requires that we begin now to develop energy resources. Typically, it requires ten to fifteen years of steady effort to proceed from leasing to actual oil production.
- Given the volatility and uncertainty in world markets today, we must consider the resources of the National Petroleum Reserve-Alaska as insurance against broader risks, whether national security or economic.

No matter what state you live in, ARCO CAP encourages you to let the Bureau of Land Management know your views on this proposal for the National Petroleum Reserve-Alaska. March 12 is the deadline for public comment, so please take action immediately.

A short letter stating your opinion in your own words is all that is necessary. Please send your comments to:

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ARCO Alaska CAP Members Visit State Lawmakers

On February 3, members of the ARCO Alaska CAP Executive Committee traveled to Juneau for a State Capitol visit. During the two-day tour, the group met with their elected state representatives, watched the state legislature in action, and sat down for a conversation with Gov. Tony Knowles, Lt. Gov. Fran Ulmer, and members of the governor's staff. Even Shadow, the governor's dog, a six-year-old black lab, ambled into the conference room to greet the visitors.

That evening, the ARCO CAP group and a number of ARCO Alaska executives hosted a reception. The event was attended by about 300 people, including lawmakers, legislative staff, and other officials.

In addition to their meetings with elected officials, CAP members attended committee hearings, sat in on House and Senate floor sessions, and toured the governor's mansion.

The Juneau visit was sponsored by ARCO CAP to give employees the opportunity to get acquainted with state lawmakers and the legislative process. Constituent communications with state officials are of prime importance in a state where resource management issues are critical to the company's operations.

In Juneau, ARCO CAP members had a chance to visit with Gov. Tony Knowles and Lt. Gov. Fran Ulmer. Above, from left, are CAP members Jack White, Judy Anderson, Dana Sorin, Stephanie Schroder, Kathleen Plunkett, Gov. Knowles, Lt. Gov. Ulmer, Gail Gallcher, Gina Lockey, Nancy Schaephoester, Steve Porter and Dick Brooks.

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arctic slope regional corp.

1751

March 12, 1998

NPR-A IAP/EIS Planning Team Members
Bureau of Land Management
Alaska State Office
222 West 7th Avenue, No. 13
Anchorage, AK 99513

RE: **Arctic Slope Regional Corporation's Final Comments on the Northeast National Petroleum Reserve-Alaska Draft Integrated Activity Plan/Environmental Impact Statement (IAP/EIS), December 1997**

Dear Planning Team Members:

The purpose of this letter is to provide the Department of the Interior (DOI) policy officials and the Bureau of Land Management's (BLM) Planning Team Members with Arctic Slope Regional Corporation's (ASRC) final views and comments on the December 1997 Draft IAP/EIS for an oil and gas leasing program within the Northeast portion of the National Petroleum Reserve-Alaska (NPR-A). This letter supplements ASRC's April 18, 1997 Scoping Comments for the NPR-A planning process (19 pages with enclosed tables and maps) and ASRC's January 14, 1998, Preliminary Comments on the Draft NPR-A Environmental Impact Statement (DEIS).

This letter also supplements a series of meetings and correspondence about North Slope and NPR-A land use management, public land policy, and proposed land exchanges in which ASRC has been engaged since 1994 with the Secretary of the Interior and other Departmental officials in Washington, D.C. and Alaska. The subject of these meetings has been to urge that DOI focus on the need to update North Slope land use planning and management and to consider land exchanges between the United States and the North Slope's other major land holders — ASRC and the State of Alaska — which could significantly benefit and advance the interests of all parties.

Anchorage Office • 301 Arctic Slope Avenue • Suite 300 • Anchorage • Alaska • 99518-3035 • (907) 349-2389 • FAX (907) 349-5476

1. Introduction

ASRC represents more than 7,900 Iñupiat Eskimo shareholders. Many of our shareholders live in Villages located within or near the 23 million acre NPR-A. They use the subsistence and other resources that the lands and waters of NPR-A and the Planning Area provide. As the historic and, for thousands of years, the only residents on the North Slope, the Iñupiat people know the resources, the animals, and the carrying capacity of the land.

The lands within NPR-A, including the Northeast Planning Area, are not a museum nor a wilderness area. These lands are the home of the Iñupiat people. They are used by the Iñupiat to meet our needs for our traditional foods and provide for the continuation of our culture, our traditions, our language and our spirit as a people.

The BLM Planning Team should accord the views and the traditional knowledge of the Iñupiat people about NPR-A and its resources substantial deference. The Iñupiat were here long before the era of commercial whaling, before the Cold War and its Dew Line Bases, and before the age of oil and gas exploration. The Iñupiat people will still be here long after the economic and strategic attraction of our lands to outsiders has passed.

The Iñupiat people also have substantial experience and success in regulating oil and gas exploration, development and production in the Arctic through their local government, the North Slope Borough (NSB). The NSB has been engaged in permitting and closely regulating oil activities on the North Slope for twenty-five years. This regulation has been very successful and has contributed to shrinking the footprint of development and providing incentives for greatly improved oil field technology. The reduced impacts of Arctic oil development when viewed in the context of Prudhoe Bay, Kuparuk, Endicott and, now, Alpine are truly impressive. The NSB has been sensitive to real world economics, protective of fish and wildlife and the environment, and has based its decision making on common sense experience and a consultative process that addresses potential problems before they arise.

The Planning Team and DOI should also recognize in the Final EIS that national energy needs, and State and Federal policies have, over time, created a North Slope economy. As a result, the Iñupiat people and other North Slope residents have become dependent on the jobs, economic activity and tax base which oil development has created. And this activity maintains the society and supports the public services that now exist. The only North Slope natural resources which can maintain this economic structure is environmentally responsible oil and gas exploration, development and production.

2. Background

NPR-A has a long history of oil and gas exploration, seismic surveys, geologic assessments, resource studies, EIS's, and prior oil and gas lease sales. As a result, there is a great deal of data and other information available about NPR-A, its fish and wildlife and other resources, its geology, and the Iñupiat people who live on and use this land.

The northern one-half of NPR-A is an area heavily used by the Iñupiat people who live in the four Villages located within NPR-A and the two Villages located near NPR-A. There are hundreds of allotments, cabins, and hunting and fishing camps scattered throughout NPR-A, including on the lands within the Northeast Planning Area. These allotments, cabins and subsistence camps are not recent developments. They represent patterns of subsistence and traditional uses by family members which date back hundreds of years.

The three Federal oil and gas exploration programs conducted between 1944 and 1981 resulted in extensive seismic surveys and the drilling of 109 exploratory wells all across the NPR-A. The drilling of many of these wells also involved the construction of gravel airstrips, camp facilities and roads from airstrips to the drilling pad sites. It is important that this current review of the Northeast Planning Area of NPR-A for a proposed oil and gas lease sale be rooted in this history and reality, and based upon knowledge gained from the extensive studies previously conducted by BLM and other agencies.

3. Subsistence Camps and Cabins

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It is important that the proposed oil and gas lease sales in the NPR-A Planning Area be based upon consultation with local residents on ways to minimize the impacts of exploration and development on subsistence resources and on the traditional land uses of the Iñupiat people. Six of the eight Iñupiat Villages on the North Slope are located within or near NPR-A's 23 million acres.

Unfortunately, the critical importance of the Iñupiat people's subsistence use cabins and camps was not recognized or addressed in the December 1997 DEIS. Instead, they were, as noted below, studiously ignored and dismissed at Chapter III-C on page 42 in the following sentence:

> "(e) Unauthorized Use: There are a number of structures, primarily cabins on Federal public lands without BLM authorization."

BLM and the Members of the Planning Team need to understand that the Iñupiat people and their subsistence camps and cabins predate the creation of the "Bureau of Land Management" and even the discovery of America. If the Iñupiat people's use of their traditional lands and camps has been "without BLM authorization" then that oversight must rest at BLM's door. Appropriate authorization can and should be granted. This could be readily achieved in a number of ways, including a land exchange with ASRC as we have proposed.

4. ASRC's Proposed Land Exchange

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The Final EIS should address the great injustice that was done to the Iñupiat people in 1971 when the Alaska Native Claims Settlement Act (ANCSA) was adopted. At that time, the 23 million acre NPR-A was a "Naval" Petroleum Reserve created by Presidential Executi

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Order in 1923. Because of this area's status in 1971 as a Naval Reserve, ASRC was not permitted to acquire lands within NPR-A, including the subsurface estate beneath the four Iñupiat Villages within NPR-A (Barrow, Wainwright, Atqasuk and Nuiqsut). This Village subsurface estate issue was addressed, in part, in 1980 by section 1431(o) of the Alaska National Interest Lands Conservation Act (ANILCA). But, ASRC, was still not permitted to select any of the other lands around the Iñupiat Villages within NPR-A, any of the cabin and camp sites our shareholders use, any of the important subsistence areas historically used by the Iñupiat people, or any of the subsurface estate of this area which might have mineral, energy or other economic potential. In short, an injustice was done.

This injustice to the Iñupiat people was compounded by the fact that under ANCSA the Iñupiat Regional Corporation was also denied selection rights within the then 9 million acre Arctic National Wildlife Refuge and within the Central Arctic area where Prudhoe Bay and other oil fields are located because of prior Federal leases and State land selections. Instead, ASRC was forced to select lands that the State, the Federal agencies and others did not want. These "left over" lands were often hundreds of miles away from our Iñupiat Villages and the areas that the Iñupiat Eskimo people traditionally used.

ASRC has proposed a remedy to this injustice. In 1994, ASRC proposed to DOI an equal value land exchange in which ASRC would exchange its 1.2 million acres of Killik River lands for a major new addition to the Gates of the Arctic National Park. The Killik lands would add a major new ecological dimension to the Park with river systems that flow into the Colville River and the Arctic Ocean.

In return, ASRC would receive the right to select some lands within NPR-A. This would include lands near our Villages, important subsistence use areas, cabins and fish camp sites, traditional and cultural use areas, and subsurface lands having potential economic value for coal, oil and gas and minerals. In 1996, the State of Alaska expressed support for this exchange and proposed State participation as well.

5. Land Exchange Declared "Beyond the Scope"

ASRC's land exchange efforts began in March 1994. This was well before the current oil and gas leasing initiative for the Northeast Planning area of NPR-A was proposed. In recent weeks, ASRC representatives have been told by DOI officials that addressing our proposed land exchanges in the Final NPR-A EIS or even acknowledging our shareholders' right to use their hunting and fish camps in NPR-A are somehow "beyond the scope" of the EIS planning process. As a result, these traditional family subsistence camps and the merits of our land exchange proposal will, apparently, not be addressed or even discussed in the Final EIS. Instead, the Iñupiat people's views about their homelands are considered by BLM and DOI as being simply as one of the "Alternatives And Issues Considered But Eliminated From Detailed Analysis" in the NPR-A DEIS.

If ASRC's interests in protecting our shareholder's hunting and fish camps, cabins, traditional and cultural use areas, and our proposed land exchange are "beyond the scope" of the EIS, they should properly be made the subject of separate discussions with DOI representatives outside the context of the Final EIS and the lease sale planning process. But, unfortunately, this is not the case. On the one hand, DOI representatives contend that discussions of fish camps, cabins and land exchanges are "beyond the scope" and will not be addressed in the Final EIS. On the other hand, and at the same time, we are told that our Iñupiat shareholders' rights and interests in these matters are somehow "too closely related" to the subject of the NPR-A EIS to be discussed or even considered by representatives of DOI until after the Final EIS is published. And when will the EIS be finalized? Apparently, not until the Final EIS is published (August 1998) and the Record of Decision (ROD) has been signed by the DOI (November 1998), and perhaps not until after other steps have been taken in accordance with nominations, notices and other lease sale procedures (March to October 1999).

Again, justice delayed is justice denied for the Iñupiat people.

6. ASRC Recommends and Supports Alternative E

ASRC strongly believes that the gy resources in the Planning Area can be and should be leased and responsibly developed. This can be done in ways that are consistent with subsistence uses and protect the fish and wildlife and the environment. ASRC supports Alternative E in the DEIS as the best way to achieve local, state and national objectives.

ASRC is opposed to "closing", to "delaying", and to "deferring" leasing in the NPR-A's Northeast Planning Area. It is our experience and our position that all of the Planning Area can, with proper regulations, stipulations, and utilizing improved land use planning and new industry technology, be safely leased, explored, developed, and produced. When and where there is a demonstrated need for the development of special stipulations or mitigation strategies for particular areas, ASRC proposes that these issues be addressed in the exploration and development work plans for activities on the lease or leases involved. It is ASRC's position that the NPR-A can and should be managed to protect the Iñupiat people's subsistence uses and, at the same time, permit leasing, exploration and development. North Slope experience shows that subsistence uses and properly regulated oil development are not inconsistent. Endicott, Alpine, Badami and other developments in recent years make very clear that subsistence objectives can be achieved in a manner that is fully consistent with properly regulated exploration and development of the Planning Area's oil and gas resource potential.

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The NSB, the State and the Federal agencies have an excellent record of preventing, minimizing, and, where necessary, mitigating impacts on the environment of Alaska's North Slope from exploring, developing and producing oil. The regulatory and management techniques which have been utilized have been greatly refined and improved over time. They include:

- seasonal limitations which confine active exploration and development activities to the winter season when migratory waterfowl and species are not in the area and when caribou are not calving or using coastal areas for insect relief;
- use of temporary ice roads which minimize surface impacts, avoid habitat damage, do not require permanent gravel access roads, and result in roadless oil fields;
- use of smaller drilling pads, and horizontal and directional drilling to reach out to maximize resource recovery, greatly reduce surface impacts, and permit development beneath sensitive surface areas;
- reinjection of cuttings and drilling fluids into subsurface formations, eliminating surface discharges and mud storage pits;
- burying or elevating gathering pipelines to avoid interference with caribou migratory routes;
- significant improvements in industry geological information from advances in seismic data which means fewer wells, less surface disturbance, better well and drilling pad placement, greater oil recovery, and less on-the-ground infrastructure;
- greatly improved land use planning, based upon better information about fish and wildlife and their habitat, resulting in a greatly reduced footprint from exploration and development;
- continuing advances in regulations, stipulations and work plans which build upon 25 years of intensive experience to address familiar problems and to deal with any unanticipated conditions which may arise;
- limitations on aircraft operations and on the ground activities during seasons or such periods of time as are necessary to avoid disturbances when migratory waterfowl or wildlife are in a leasehold area;
- use of buffer zones and set backs to avoid disturbance to waterfowl and wildlife during seasons of nesting, calving, molting or other sensitive periods; and
- establishing corridors or areas on leases where no permanent surface occupancy will be allowed to protect migration routes, unique habitat or other conditions

These regulatory and management techniques continue to be improved. Coupled with the major advances in oil industry technology and land use planning that are taking place, ASRC is confident that all of the lands in the NPR-A Planning Area can be leased and safely explored and developed. In some lease areas this will require the use of buffer zones and set backs, the designation of areas not suitable for permanent surface occupancy, seasonal limitations on activities, and common sense resolution of potential conflicts.

The NSB, the State and Federal regulatory agencies are experienced in these land use management, regulatory and mitigation activities. The developments now underway at the Alpine oil field show the state of the art, what is possible, and how to do it.

The NSB has twenty live years of experience in permitting and regulating North Slope oil exploration and developmental activities. The NSB has comprehensive land use and environmental codes contained in Title 19 and other Borough ordinances. The NSB maintains a very competent staff, including biologists and other scientists and professional staff with substantial and successful experience in regulating developmental activities and protecting fish and wildlife, subsistence users, the land and water and other environmental values.

7. ASRC Strongly Opposes Creating New Special Areas and Other Designations

ASRC is strongly opposed to any land use designations which would expand "special areas", designate habitat areas as "critical", limit the traditional use of such areas by the Iñupiat people, or add new Wild and Scenic River, National Park, Wildlife Refuge, Wilderness or other such designations within the Planning Area or within NPR-A.

It is ASRC's view that designations of this nature would create problems and restrict the Iñupiat people's uses of NPR-A's lands and resources. Matters of particular concern include:

- maintaining access to allotments, to hunting and fishing camps and cabins, and to ASRC's private lands at Cape Halkett;
- our experience that any designation of an area as special or unique soon develops a constituency for management of that area as wilderness; and
- the need for BLM and DOI to treat the interests and lifestyle of the Iñupiat people the people who use this area — with respect.

Our concerns on this matter of restrictive designations are not hypothetical. They are based upon hard experience. The Iñupiat people of Anaktuvuk Pass, one of our Villages which is located within the Gates of the Arctic National Park, were told that creation of the Park would not change or jeopardize their lifestyle and subsistence activities. However, designation of the Park did change and severely limit their lifestyle and subsistence activities. Arbitrary regulations were imposed which limited subsistence hunters' ability to travel and hunt in customary places and to take the fish and animal resources necessary for survival. The Anaktuvuk experience

well known to all of ASRC's shareholders. It colors their thoughts and their relationship with the National Park Service. This regulation of residents' activities is seen as having been unfair.

Our concerns are also informed by the experience of our Village of Kaktovik, located on Barter Island and within the boundaries of the Arctic National Wildlife Refuge. Here, fewer than 200 Iñupiat people live within a 19 million acre Refuge which is larger than many lower 48 States. Yet, they are forced to live with restrictive regulations and oversight of their activities by Fish and Wildlife regulatory personnel.

Our shareholders want to have the use of our traditional lands. They want the lifestyle and the freedom our forefathers enjoyed.

8. Conclusion

In conclusion, and on behalf of ASRC's shareholders, I want to thank Secretary Babbitt for his visit to Alaska's North Slope last summer. The Secretary's remarks during his visit to Noah and Molly Ita's fish camp reflected an understanding and appreciation of the importance of Iñupiat culture, our subsistence lifestyle, and our people's relationship to the land. Secretary Babbitt's visit to the Alpine oil field afforded an opportunity to see the great progress which has been made in making our subsistence culture compatible with the development of energy resources and providing economic benefits which the nation and the Iñupiat people need.

Also, on behalf of ASRC's shareholders, I want to thank Governor Knowles for his leadership and his "Doing It Right" policy for developing Alaska's oil and other natural resources. The Governor has worked hard in this area. He has brought excellent leadership into the key resource agencies, and he has made State government accessible to all stakeholders. As a result, Governor Knowles has earned respect and gained credibility with ASRC's shareholders.

Finally, I want to thank the BLM Planning Team members for their continuing efforts to address and resolve issues which draw different views from a variety of experts. It is the hope of ASRC's shareholders that you will accord deference to the knowledge and life experiences of the Iñupiat people on the issues presented. We also hope that you will approach your task as generalists assigned the responsibility of developing a policy which advances the interests of the State and nation.

We urge that BLM give these comments, views and recommendations the serious attention and recognition that our shareholders merit and deserve.

Enclosed for your use and information is a separate letter of March 12, 1998 to Tom Allen, State Director, BLM, which addresses ASRC's comments and recommendations on the "Kuukpik/ASRC Land Entitlements in NPR-A; Proposed Federal Lease Sale in NPR-A."

Sincerely,

Jacob Adams

Jacob Adams
President
ARCTIC SLOPE REGIONAL CORPORATION

Enclosure

cc: NPR-A Planning Team
Secretary Bruce Babbitt, Department of the Interior
Senator Ted Stevens
Senator Frank Murkowski
Congressman Don Young
Governor Tony Knowles, State of Alaska
Mayor Benjamin Nageak, North Slope Borough
Marie Carroll, Chief Administrative Office, North Slope Borough
John Shively, Commissioner, State of Alaska DNR
John Katz, State of Alaska, Washington, D.C. Office
Deborah Williams, Department of the Interior
Brooks Yeager, Department of the Interior
Tom Fry, Deputy Director, Bureau of Land Management
Don Long, President, Iñupiat Community of the Arctic Slope
Joseph Nukapigak, Sr., President, Kuukpik Village Corporation

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arctic slope regional corp.

March 12, 1998

Mr. Tom Allen
State Director
Bureau of Land Management
222 West Seventh Avenue, #13
Anchorage, Alaska 99513

Re: Kuukpik/ASRC Land Entitlements in NPR-A; Proposed Federal Lease Sale in NPR-A

Dear Mr. Allen:

As a supplement to its comments on the Draft Integrated Activity Plan/Environmental Impact Statement ("DEIS") for the Northeast National Petroleum Reserve-Alaska filed on this date, Arctic Slope Regional Corporation ("ASRC") submits this letter on the separate issue of the remaining land selection and conveyancing rights of Kuukpik Corporation ("Kuukpik") and ASRC within the former ANCSA Section 11(a)(1) withdrawal area. This withdrawal area is referred to in the DEIS as the Kuukpik Corporation Entitlement Land Use Emphasis Area ("Kuukpik Entitlement LUEA").

On pages 2 and 6 of its April 17, 1997, Scoping Comments on the DEIS, ASRC asserted that the land selection and conveyancing rights of Kuukpik and ASRC within the former ANCSA Section 11(a)(1) withdrawal should be given precedence over and protected from any Federal oil and gas leasing within the withdrawal area. In its Scoping Comments, ASRC explained in detail the basis for its position that leasing activity in the Section 11(a)(1) withdrawal area prior to the exercise of these selection rights would deny to ASRC and Kuukpik -- and, through the revenue sharing provisions of Section 7(i) of ANCSA, all Alaska Natives -- the benefits of economically viable lands. This is precisely what Congress intended to grant them when it enacted ANCSA in settlement of the aboriginal land rights of Alaska's Native people.

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The manner in which the DEIS treats ASRC's and Kuukpik's selection rights in Alternatives C, D and E would deny to them a substantial portion of the economic benefits that will likely be derived from the lands ultimately conveyed to Kuukpik and ASRC within the former Section 11(a)(1) withdrawal area. 003

Alternatives C, D and E all provide that:

> The Kuukpik Corporation Entitlement LUEA would be available for oil and gas leasing, and royalties would be put in escrow.

DEIS at II-19-20. (Emphasis added.)

ASRC takes little comfort from the BLM's statement that any royalties would be put in escrow for several reasons. First, the statement is limited to royalties and is silent on the issue of whether "front-end" bonus payments that would be generated in a competitive oil and gas lease sale or subsequent rental payments would also be escrowed. Nowhere in the DEIS does BLM explain the source for its statement that "royalties would be put in escrow," but presumably the reference to such an escrow arrangement is based on the provisions of a land exchange and consolidation agreement that ASRC entered into with the Department of the Interior in June 1979, which was later ratified as a matter of federal law in Section 1431(a) of ANILCA.

Paragraph XI.E of the "Terms and Conditions for Land Exchanges and Resolution of Conveyancing Issues in Arctic Slope Region Between the Department of the Interior and Arctic Slope Regional Corporation" ("1979 Terms and Conditions"), referenced in Section 1431(a), provides that:

> After ASRC exercises its option to acquire title to lands through an exchange under this paragraph XI, the Secretary [of the Interior] shall place in an escrow account for the account of ASRC in the Treasury of the United States any income from subsurface lands ASRC has elected to acquire. The monies placed in such escrow account shall only be the income received by the Secretary after ASRC has exercised the option described in this paragraph XI, and derived from the specific lands ASRC has identified for conveyance. (Emphasis added.)

Although it is clear that the escrow provisions of Paragraph XI.E of the 1979 Terms and Conditions apply not only to royalty income but to all other income that may be derived from the affected subsurface, there are two serious flaws in the BLM's proposed escrow arrangement that would substantially diminish ASRC's property rights.

003 The first problem arises with respect to identifying the "specific lands" to which the escrow arrangement would apply. When ASRC exercised its option under Section 1431(o) of the Alaska National Interest Lands Conservation Act ("ANILCA") in 1987, it elected to acquire the subsurface beneath all Kuukpik lands in NPR-A even though a portion of such lands -- 21,374 acres as it now turns out -- had not been selected by Kuukpik at that time. Until Kuukpik makes its remaining land selections, the Secretary of the Interior will not know which monies to place in escrow because the specific lands have not yet been identified by Kuukpik.

The second major problem with the BLM's proposed escrow arrangement is that it undoubtedly would lead to unnecessary conflicts not only with the United States, but with the State of Alaska as well. Under current law, the State has the right to receive 50% of the revenue generated from federal oil and gas leasing within NPR-A (subject to the obligation to reallocate a portion of such revenue to the impacted local communities). It is highly likely that, if any federal oil and gas leases are issued on lands before Kuukpik makes its selections within the former Section 11(a)(1) withdrawal area (and with respect to which Kuukpik would later receive a conveyance to the surface estate, and ASRC the corresponding subsurface estate), the State would claim that its right to receive revenues from the leasing activity could not be defeated by ASRC's escrow rights under the 1979 Terms and Conditions. At the very least, such a dispute would lead to costly and protracted litigation with the outcome uncertain for several years. Accordingly, ASRC strongly opposes the treatment of its vested ANILCA Section 1431(o) rights as suggested in Alternatives C, D and E.

While ASRC does not support Alternative B because of the proposed deletion of extremely large areas from oil and gas leasing, for the most part Alternative B does adopt the position on the land selection issue taken by both ASRC and Kuukpik in their April 1997 Scoping Comments that addressed the land selection issue. Alternative B would postpone leasing within most of the proposed Kuukpik Entitlement LUEA until the corporations' entitlements have been satisfied.

004 Inexplicably, however, Alternative B leaves one township -- Township 10 North, Range 2 East (U.M.) -- open to leasing prior to the exercise of Kuukpik's remaining selection rights. BLM appears to base this exclusion on the erroneous assumption that Kuukpik's remaining entitlement is only 13,000 acres (see DIAP/EIS at II-3) instead of the approximately 21,374 acres to which Kuukpik is entitled. The draftsmen of the DEIS apparently were unaware that on September 16, 1997, by written notification to the BLM, ASRC reallocated to Kuukpik its remaining 8,253 acres of entitlement under Section 12(b) of ANCSA.

Once again, ASRC emphasizes that it does not control the timing of Kuukpik's exercise of its remaining selection rights. ASRC, however, still strongly believes that it would be in the best interests of ASRC, Kuukpik and the United States if the "underselection" problem is

addressed and resolved prior to any leasing of lands within the proposed Kuukpik Entitlement LUEA. Once Kuukpik's lands have been identified and selected, most if not all of the remaining federal lands within this LUEA would be available for leasing on a basis that would not conflict with either Kuukpik's or ASRC's vested rights.

Very truly yours,

Jacob Adams

Jacob Adams
President
ARCTIC SLOPE REGIONAL CORPORATION

Enclosure

cc: NPR-A Planning Team
Secretary Bruce Babbitt, Department of the Interior
Senator Ted Stevens
Senator Frank Murkowski
Congressman Don Young
Governor Tony Knowles, State of Alaska
Mayor Benjamin Nageak, North Slope Borough
Marie Carroll, Chief Administrative Office, North Slope Borough
John Shively, Commissioner, State of Alaska DNR
John Katz, State of Alaska, Washington, D.C. Office
Deborah Williams, Department of the Interior
Brooks Yeager, Department of the Interior
Tom Fry, Deputy Director, Bureau of Land Management
Don Long, President, Iñupiat Community of the Arctic Slope
Joseph Nukapigak, Sr., President, Kuukpik Village Corporation

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March 12, 1998

Mr. Tom Allen
State Director
Bureau of Land Management
222 West Seventh Avenue, #13
Anchorage, Alaska 99513

Re: Kuukpik/ASRC Land Entitlements in NPR-A;
Proposed Federal Lease Sale in NPR-A

Dear Mr. Allen:

On this same date, Arctic Slope Regional Corporation ("ASRC") has submitted its comments on the Draft Integrated Activity Plan/Environmental Impact Statement ("DEIS") for the Northeast National Petroleum Reserve-Alaska and a supplemental letter on the separate issue of the remaining land selection and conveyancing rights of Kuukpik Corporation ("Kuukpik") and ASRC within the former ANCSA Section 11(a)(1) withdrawal area.

This letter is to clarify one aspect of Mr. Jacob Adams' letter on the issue of Kuukpik's and ASRC's land selection and conveyancing rights. That letter addressed the issue of the impact of proposed oil and gas leasing activity within the former Section 11(a)(1) withdrawal area should it occur prior to the exercise of Kuukpik's right to select its remaining entitlement of approximately 21,374 acres within such area. Although there is no statement in the text of the DEIS to support such a construction, it is possible to construe the map exhibits for Alternatives C, D and E (DEIS at II-23-25) as contemplating leasing on the lands validly selected by Kuukpik in 1974-75, and to which ASRC's right to receive the subsurface estate vested in 1987 when it exercised its option under Section 1431(o) of the Alaska National Interest Lands Conservation Act. 005

The selected lands -- aggregating approximately 20,345 acres -- are not depicted on the referenced map exhibits, but I assume this was simply an oversight in the preparation of such exhibits.

Mr. Tom Allen
March 12, 1998
Page 2

If, however, this is not a mistake, this is to advise you that ASRC will strenuously oppose any oil and gas leasing on these lands prior to conveyance of the surface estate to Kuukpik, and the coterminous subsurface estate to ASRC. 005

Very truly yours,

James Wickwire

cc: Mr. Jacob Adams

1751-001
Please see Response 1669-039.

1751-002
Please see Response 0106-003.

1751-003
The language in Alternatives C, D, and E has been modified so as not to limit the funds to which ASRC may be entitled only to royalties. All applicable revenues would be escrowed to ASRC.

1751-004
Please see Response 1670-005.

1751-005
Please see Response 1670-012.

1752

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Rd.
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

NAES

MAR 12 1998

Memorandum

To: State Director
Bureau of Land Management

From: Regional Director

Subject: Draft EIS, Northeast National Petroleum Reserve-Alaska

The U.S. Fish and Wildlife Service has reviewed the Draft Environmental Impact Statement and Integrated Activity Plan prepared for the Northeast National Petroleum Reserve-Alaska. The DEIS document analyzes various management alternatives for a 4.6-million-acre planning area in the northeast sector of the National Petroleum Reserve-Alaska, with an emphasis on the potential impacts of an oil and gas lease sale. The Service is well aware of the tremendous effort that has been expended in compiling data and public comment. We commend you for soliciting and assimilating Service data pertaining to our trust resources, particularly migratory birds and marine mammals.

Comments that address specific aspects of the DEIS are attached, as well as background information and analysis that can be used in formulating your decision regarding oil and gas leasing in the Teshekpuk Lake Special Area. The Service believes that adequate protection of wildlife and habitat values can be achieved over most of the planning area through implementation and enforcement of the stipulations proposed in the DEIS. We have remaining concerns, however, regarding resource protection within the Teshekpuk Lake and Colville River Special Areas, and the associated Land Use Emphasis Areas.

Teshekpuk Lake Special Area

The area north and east of Teshekpuk Lake is designated in the DEIS as the Goose Molting Habitat LUEA, in recognition of its importance to molting geese. In deciding whether to lease this area, one must weigh the value of the wildlife resource against the potential risks inherent in development. The value of the resource is not in question. Tens of thousands of geese aggregate in this region annually, using the large lakes and adjacent shorelines as a secure habitat in which to complete their wing molt. As molt progresses, the birds remain flightless for several weeks; they are vulnerable to predators and therefore react strongly to disturbance. Four species of geese are present; notably, up to 23,000 brant use the area, representing up to one fifth of the Pacific Flyway population. Brant gather in the Teshekpuk Lake area from breeding colonies in Alaska and Canada, many hundreds of miles away. There is no comparable molting area for arctic-nesting geese in the world.

The value of the Goose Molting Habitat LUEA (molting area) as a unique and irreplaceable habitat for internationally important waterfowl populations is unquestionable. The risk to the habitat and populations, should oil and gas leasing be permitted, is more difficult to assess. The apparent conclusion of the DEIS that oil and gas leasing in the molting area will have only minor impact, however, lacks a firm foundation. The Service has reviewed a broad array of relevant studies (see attached). Observations and experimental study of molting geese within the planning area confirm that they react adversely to human activities at distances of hundreds, or thousands, of meters. The Service is aware of the evidence that geese have habituated to some aspects of human activity in the existing oil fields, but there is substantial uncertainty in the degree to which those results may be applied to birds using the molting area. There are some notable differences in circumstances: 001

- The molting area is used predominantly by birds that have not bred in that year. In contrast, the majority of oilfield birds are engaged in brood-rearing during the molt period, and this may be reflected in differing behavioral reactions to disturbance.
- Average flock size is larger in the molting area, and this may influence the birds' behavior, as larger flocks tend to react more strongly to disturbance.
- Birds exposed to oilfield activity as goslings are likely to be more habituated to human activity than the birds that molt at Teshekpuk, which likely have no prior experience with oilfield-related activities.

If molting geese in the planning area prove unable to habituate to human activity, then the predictions of the DEIS that discount the possibility of population-level impacts are unjustified. At the end of the molt period, brant in the Teshekpuk Lake area are in a state of depleted nutrient reserves. We do not know whether these birds have the ability to compensate for additional energy demands and loss of food intake associated with chronic disturbance. Again, birds in the oilfields are an imperfect model because the numbers and density of geese in the molting area far exceed those of the oilfields, habitat characteristics differ markedly, and physiological condition may differ according to breeding status.

Should leasing in the Goose Molting Habitat LUEA occur, the Service supports implementation of stipulations proposed to minimize impacts to geese. It must be recognized, however, that the stipulations represent a compromise between the goal of maximum protection, and the goal of allowing oil and gas development. The effectiveness of those stipulations is by no means assured. Furthermore, even with the best of intentions, stipulations may be rendered ineffective by problems associated with implementation and enforcement. Enforcement is key, and is a neglected topic in the DEIS. We note, for example, that neither State regulation nor industry policy has been effective in eliminating the problem of attraction of wildlife to waste disposal sites in the existing oilfields. A similar failure of enforcement could have disastrous consequences to waterfowl in the molting area. Also, while management flexibility is clearly needed, frequent waivers could reduce the effectiveness of the proposed stipulations. For these reasons, proposed mitigation may be insufficient. 002

An additional concern is that the level of human activity in the molting area may exceed that which is predicted in the DEIS. The history of the existing North Slope oilfields suggests that the eventual density of development and level of activity may far exceed initial predictions. The "minimal impact model" represented by the proposed Alpine facility, and assumed in the DEIS analysis, is untried and may prove unrealistic. To a large degree, DEIS predictions of minimal impact are based on the presumption that the area affected by development will be small. Once leased, however, there is no area-wide planning mechanism by which spreading infrastructure may be controlled, should the oil and gas potential of the area exceed expectations. This adds a substantial element of uncertainty in regard to the ultimate level of habitat alteration and disturbance. 003

While the bird populations of the Arctic Coastal Plain of Alaska are spectacular, they are generally distributed at low densities. Therefore, the potential for limited human development to impact birds at the population level is diminished. The Teshekpuk Lake area is a clear exception to this generality. A single lake may support as many molting brant as the entire breeding population on the North Slope. Up to 22 percent of the Pacific brant population may be present in a single year. Given this degree of concentrated use, population-level impacts are clearly a distinct possibility. 004

In summary, the risks associated with our uncertain capacity for effective protection argue against leasing in the molting area. The case for this position is strengthened by congruence with other important wildlife considerations. There is broad overlap with the area of greatest concern for the Teshekpuk Lake Caribou Herd, habitat for the threatened spectacled eider, and high density areas for a number of other water birds. Given the exceptional wildlife values of this region, leasing should be predicated on a high degree of confidence in predictions of minimal impact. That standard has not been met.

Only a portion of the calving area of the Teshekpuk Lake caribou herd would be protected by a deletion of the goose molting area from leasing. The Service has opposed oil and gas leasing within calving areas on the Arctic Coastal Plain, because of concerns regarding potential impacts of development on the distribution of female caribou during the calving and post-calving period. Several lines of evidence suggest a long-term negative impact on caribou populations resulting from displacement from intensively developed areas. Some studies suggest that reduced fecundity of caribou in the oilfields has resulted from displacement from preferred habitats and disruptions to normal movements. There is scientific uncertainty regarding these conclusions, but we agree with statements in the DEIS which indicate a potential for lowered productivity and abundance of caribou in the Teshekpuk Lake herd. The Teshekpuk Lake herd is relatively small, and is important to subsistence users. Until there is greater confidence that oil production can be accomplished without displacing calving caribou, it would be prudent to defer leasing within the concentrated calving area, including those portions of the Caribou LUEA located south and southeast of Teshekpuk Lake.

Colville River Special Area

The Colville River corridor overlaps a number of LUEAs, including those designed for protection of fish, raptor/passerine/moose habitat, recreation, scenic values, and the potential Wild and Scenic River designation. The Colville River Raptor, Passerine, and Moose LUEA (Colville River LUEA) is of most concern to the Service. We appreciate your commitment to maintaining the Colville River's outstanding raptor populations, as indicated by the recognition of this LUEA, and expansion beyond the original Colville River Special Area boundaries to include important habitat on the Kikiakrorak and Kogosukruk rivers. The Colville River LUEA would provide a one-mile buffer (within which permanent oil and gas surface structures would be prohibited) west of the Colville River bluffs, and on both sides of the above-named tributaries. The rationale for the chosen buffer size is unstated, but is consistent with Service protection guidelines for peregrine falcon nest sites.

The Colville River is well known for the abundance of raptors that nest along its course. As a result of the mosaic of habitat types in the river corridor and surrounding tundra, there is a variety and density of birds and small mammals that is unusual for high-arctic areas. These abundant prey resources, combined with the large number of cliffs along the river, results in a raptor guild that is noteworthy for both its numbers and density. Additionally, the taxa in this guild, which include arctic peregrine falcons, gyrfalcons, and rough-legged hawks, nest exclusively in arctic and subarctic areas. Therefore, a substantial proportion of the United States' breeding population of each of these taxa is contained within NPR-A and the Colville River drainage. For example, we estimate that about one-fourth of Alaska's arctic peregrine falcon nests (60 of 250) are located within the Colville River LUEA. The exceptionally high nest density is impressive testimony to the importance of the Colville River to raptors, but does not tell the whole story. Monitoring data suggest that peregrine recovery on the Colville River significantly preceded that in other areas, and peregrines banded on the Colville River have been found nesting along several other North Slope streams. We believe that the Colville River may be a core area or source population important for establishing and maintaining local populations in adjacent areas. Thus, maintaining habitat quality along the Colville River is important, not only for maintaining the significant local population, but perhaps also for maintaining stable populations over a broad area.

The multiple values of the Colville River corridor are important enough to warrant more comprehensive study. Perhaps because of its focus on oil and gas development, a wide variety of activities which may affect raptor productivity are insufficiently considered in the analysis, and in the formulation of proposed stipulations. Within the current EIS effort, a workshop to develop stipulations (similar to those conducted for the Caribou and Goose Molting LUEAs) would be appropriate. We urge you to convene such a workshop prior to publication of the final EIS. This would provide an opportunity to incorporate the extensive scientific literature on disturbance to raptors into the planning effort. The workshop should include nationally recognized experts in raptor management, as well as other technical experts and representatives of user groups. The results of the workshop would also be a useful first step toward developing a comprehensive habitat management plan for the entire Colville River Special Area. Considering the Special Area in its entirety (to include portions of the river system upstream of the planning area, as well as lands within the planning area but outside of the Colville LUEA) is consistent with an ecosystem management perspective. Unlike the LUEA, the Special Area has status independent of the current planning effort, therefore, it is desirable to develop management prescriptions 005 006

pertaining to the Special Area that will not expire when the current EIS expires. We urge you to consider the following issues: 006

- The current effort, and the previous leasing EIS, recognized the importance of the Kikiakrorak and Kogosukruk rivers to raptors. A change in the boundaries of the Special Area, to include these tributaries, would be appropriate.

- While the one-mile buffer for raptor nests is consistent with recommended practice for individual nests, a larger buffer may be appropriate given the extraordinary nest densities on portions of the Colville River. The capabilities of extended-reach drilling suggest that an expanded set-back for facilities would not impede development of oil and gas resources, and would be consistent with the framework of "maximum protection" within the Special Area. A larger setback is one way to minimize the indirect effect of enhanced access which may accompany oil and gas development.

- It would be prudent to consider additional measures to minimize potential impacts of increased human activity (recreational, and subsistence-related, as well as commercial) along the Colville River. A combination of outreach efforts and permit restrictions, along with enforcement, will probably be necessary to minimize disturbance to nesting raptors.

- The Colville River corridor would be particularly vulnerable to impacts associated with road access, because it would be an attractive destination for a wide variety of users. Roadless development is critical to minimizing impacts to wildlife in this area.

As in the case of the Teshekpuk Lake Special Area, the case for enhanced protection along the Colville River is strengthened by the overlap of a wide variety of resource values associated with this area. Recognizing that the riparian habitat along the Colville River supports the most diverse land bird community in the Alaskan arctic, the Service encourages your agency to pursue designation of a Colville River Bird Conservation Area, irrespective of the leasing decision.

Thank you for the opportunity to comment on these important issues. If you have any questions on this matter, please contact Philip Martin (907-456-0325).

Attachments

1. U.S. Fish and Wildlife Service Comments on Draft NPR-A IAP/EIS

2. Prospects for Conflict Between Oil Development and Waterfowl in the Teshekpuk Lake Region, NPR-A

Attachment 1. U.S. Fish and Wildlife Service Comments on the Northeast NPR-A Draft IAP/EIS

The following comments are organized in two sections: general comments which address broad issues or issues applicable to several of the analyzed alternatives, and specific comments referenced to the applicable text in the DEIS. In the case of suggested revisions, text to be deleted is noted by "strike-outs," and additions to the text are indicated in bold-face.

GENERAL COMMENTS

Description of the Affected Environment

Wetlands 007

Wetlands have special significance, both from an ecological and regulatory perspective. The FWS provided information (incorporated into your November 1996 briefing book) on the amount and distribution of wetlands in the planning area. This information should be included in the EIS, and related to the description (p. II-38) of the U.S. Army Corps of Engineers Section 404 permitting process.

Spectacled Eider LUEA 008

The boundaries of the LUEA are based on the location of the high-density areas, as depicted in Figure III.B.6-1. While very useful for depicting general distribution, the exact shape of the density contours are unstable because of the low density of the birds, and because the appearance changes in response to parameters chosen in the analysis. Therefore, the LUEA as drawn may exclude some high-density areas for spectacled eiders. The FWS recommends revising the boundary of the LUEA to include all of the planning area north of, and including, Township 13 N. This area would include the point locations of most of the spectacled eiders observed on aerial surveys within the planning area.

Impact Analysis

Reliability of the Development Scenario 009

The assumptions on which impact analyses are based are unrealistically optimistic. The DEIS uses ARCO's proposed Alpine development (on the Colville River delta) as its model for future oil fields. It is premature to assume that this field will operate as currently envisioned. The DEIS language is likely to mislead the reader into believing that Alpine construction has begun, as in the statement (p. IV-A-21) that, "Pipeline crossings of large rivers...will use the HDD techniques demonstrated by the Alpine project." No "roadless" oilfields are currently operating, and it seems likely that the eventual footprint and activity level required to produce peripheral

fields will be greater than predicted, just as the Prudhoe Bay field grew well beyond the predictions in the original EIS. Depending on the spatial arrangement of oilfields, an extensive network of roads could develop. For instance, under the multiple sales scenario, the maximum number of oilfields predicted under Alternative C (Caribou LUEA deleted) is 3, compared to 10 under Alternative E (no deletions). This implies a possible total of seven fields concentrated in the area of maximum sensitivity for caribou and waterfowl. None of the analyses in the DEIS consider development at this density, and wildlife impacts under that scenario would be much greater than predicted. 009

It would be more realistic to model a range in the expected footprint of new oilfields, rather than assume a size (100 acres) which is even smaller than that proposed for Alpine.

The EIS analysis should not assume roadless development unless roadless development is a lease sale stipulation. If a road were built that connects the planning area to the existing network on State lands, this would have profound long-term wildlife and social impacts. The EIS should analyze these cumulative effects unless such a road is explicitly ruled out. 010

The discussion of material sites should be expanded. Material sites outside the planning area are ignored, despite the interrelationship between actions contemplated by the DEIS and gravel mining. Discussion of the likelihood of mining in the Colville River floodplain, and associated impacts, should be discussed. The scenario of barging gravel to coastal sites in the western portion of NPR-A would be unprecedented on the North Slope. What are the likely alternatives if that option proves prohibitively expensive? 011

Unjustified Selection of Optimistic Assumptions 012

When the potential impacts are uncertain , the DEIS tends to assume that impacts will be relatively benign, without justification. For example, the extent to which breeding birds displaced by North Slope development can use adjacent habitat is a subject of scientific debate. The DEIS assumes that all displaced birds can use adjacent habitat, but it is also possible that none of the displaced birds will find unoccupied habitat. The DEIS should model the full range of potential effects, not just the most optimistic scenario.

In another example, the DEIS routinely minimizes the potential effects of increased predator populations on prey species such as waterfowl. For instance (Page IV-C-21), attraction of predators is "not expected to cause other than local concentration of predators affecting local breeding success." Perhaps this conclusion is rooted in the scientific uncertainty regarding the relationship of human oil development to predator populations. This is a fallacy. If development results in higher predator populations, then the effects on waterfowl could be widespread and long-lasting, and the DEIS should consider this as an equally probable scenario. As a further manifestation of the optimistic outlook, the disposal of fund waste is assumed to be improved relative to current practice.

Detection of Impacts versus Natural Population Fluctuation 013

We are repeatedly advised that impacts "may not be detectable above natural fluctuations of the population and survey methods/data available." This disclaimer is not grammatically correct and is subject to gross misinterpretation. The FWS has the following objections to its use.

- It is used in the context of certain impacts, such as breeding success, that can be measured effectively, without regard to population fluctuations.
- It is cited in cases, such as the recovery time for goose populations after an oil spill, that could be estimated on the basis of existing population models.
- It is used in cases where existing baseline information is insufficient, but could be collected prior to development. In many cases, even very large impacts would be undetectable using available data, but given sufficient effort this problem could be overcome. The ability to detect change is a function of the magnitude of change and the effort expended to measure change. The DEIS confuses these two issues.

The reader should not be misled into believing that an inability to detect population-level impact is equivalent to "negligible impact."

Chronic Effects 014

In some cases, chronic wildlife disturbances are treated as discrete, independent events. For example, unspecified disturbance effects to molting geese are predicted to last from "hours to 1 day," (p. IV-F-9). This analysis does not account for the cumulative effect of multiple disturbances.

Comparisons Among Alternatives 015

In many cases, comparisons of the magnitude of impacts among alternatives are unreasonable and contradictory. As an example, under Alternative B (p. IV-C-38), it is stated that, "...no leasing will occur in the northern portion of the planning area [where most spectacled eiders occur] under this alternative, so spectacled eiders will not be affected by vehicle traffic." However, the description of impacts to eiders under Alternative E, which leases all of the northern portion of the planning area, begins (p. IV-F-16) with the statement, "The potential effects on spectacled eiders and Steller's eiders from discharges, seismic surveys, construction activities, and oil spills associated with oil and gas activities are expected essentially to be the same under this alternative as under Alternative B."

Stipulations

Applicability of Stipulations 016

We are surprised that only 7 of the proposed 82 stipulations are intended as lease sale conditions, with the remainder to be "attached to applicable individual permits." This creates unnecessary confusion regarding BLM's intentions. Will the remaining 75 stipulations be open to negotiation or waiver at the time of permit issuance? The impact analyses in the DEIS are predicated on application of the entire set of stipulations, which were developed in consultation with local and State government. To the extent possible, these stipulations should be included as lease sale conditions. This would provide up-front assurance to the public, and to agencies, which have provided their input during the NEPA process. It would also provide up-front notification to industry regarding the regulatory regime in which they will need to operate. In the later stages of permitting, the applicant may argue against conditions on the grounds of economic hardship — if all conditions are known at the time of the lease sale, then rational investment decisions can be based on a comprehensive analysis of development costs. We urge that stipulations with region-wide applicability be included as Lease Sale Stipulations.

Analysis of Effectiveness of Stipulations 017

In some cases, beneficial effects are predicted from stipulations that are not applicable to the specified Alternative. The lists of stipulations should be scrutinized carefully, and inapplicable stipulations deleted.

The discussion of stipulations assumes compliance but does not address the probability of compliance and what BLM will do to achieve it. For example, aircraft disturbance will be mitigated by maintenance of seasonal minimum flight altitudes and lateral distance over the Colville LUEA. This section should note the frequency with which weather will prevent compliance. The same is true in a general sense for Stipulations 1 and 75 that seek to avoid attracting wildlife. There is no discussion of the effectiveness of similar regulations elsewhere in the State, or of efforts (or lack thereof) to enforce these stipulations elsewhere. One approach would be to use information on enforcement and compliance on comparable stipulations as a model to predict what will happen in NPR-A. For example, has BLM ever enforced aircraft stipulations along the Colville, where restrictions near falcon nests sites have existed and been marked on aviation maps for years? Is the compliance rate acceptable? Are regulations regarding wildlife attraction to refuse effective elsewhere on the North Slope? If not, what improvements can BLM implement to ensure compliance?

Comments on Specific Stipulations 018

Page II-29, Stipulation 20a. The intent of this stipulation is to reduce impact to denning polar bears by restrictions on winter activities in favorable denning habitat, as well as in proximity to known dens. We fully support this intent, but expect that implementation may be problematic.

The current language suggests that seismic lines and overland roads could be realigned by 1/4 mile if feasible, however, re-aligning seismic lines by 1/4 mile is rarely feasible. The following revision is proposed: 018

> **Because polar bears are known to den predominantly within 25 miles of the coast, operators shall consult with FWS prior to initiating activities in such habitat between October 30 and April 15.** Activities are prohibited within 1 mile of known or observed polar bear dens; obtain locations from U.S. Department of Interior, Fish and Wildlife Service, (907) 786-3800. Operators are encouraged to apply for a Letter of Authorization from FWS to conduct activities in polar bear denning areas.

We believe that the language proposed above would allow for greater flexibility in dealing with activities in polar bear habitat. We believe that we could work with operators on a case by case basis to determine which course of action is most appropriate to protect polar bear habitat, and that seasonal and spatial restrictions applied at the permit level may be more appropriate than generic realignments.

Proposed stipulation 20a, in combination with stipulation 64 requiring employee orientation and stipulation 81 that mandates bear-human interaction plans, will substantially mitigate impacts on polar bears and their habitat. 019

Page II-29, Stipulation 20b. It is not clear whether this stipulation refers to winter travel, as well as summer travel. Gyrfalcons may occupy nesting cliffs as early as mid-March, and may be particularly prone to disturbance during the pre-nesting period. It would be appropriate to restrict vehicle traffic in the vicinity of known gyrfalcon nest sites beginning March 15. 020

Page II-31, Stipulation 30. To clarify intent, we suggest the following revision: "Exceptions under Alternative E may be granted or required by BLM in consultation with FWS, if~~n development is permitted within 3,200 feet to avoid siting such facilities within 0.6 mile of a~~ **high-use** goose lake. 021

Page II-31, Stipulation 30. This stipulation, as written, focuses exclusively on arctic peregrine falcons. More effective protection for all raptors could be achieved by revising the stipulation as follows: "Aircraft will maintain an altitude of 1500' AGL from April 15 through August 5 when within ½ mile of peregrine falcon nests cliffs **identified as raptor nesting sites**, unless doing so would endanger human life or violate safe flying practices. Compliance and enforcement will be simplified by specifying cliffs, rather than nests, because the location of nest sites is more difficult to determine from the air. 022

Page II-33, Stipulation 51. As written, this stipulation might encourage stockpiling of equipment during the period of maximum sensitivity for molting geese. This is in conflict with numerous 023

stipulations intended to minimize disturbance during that period. Within the Goose Molting LUEA, stockpiling should not be scheduled until after 20 August. 023

Page II-33, Stipulation 59. Other Federal agencies, including the FWS, will have a role in the rehabilitation of wetland habitat, through the Corps of Engineers wetlands regulatory process. The BLM should broaden the scope of consultation, and list the appropriate Federal agencies (Corps, FWS, Environmental Protection Agency, National Marine Fisheries Service). 024

Page II-35, Stipulation 78. This stipulation was modified from its original form, as recommended by the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop (Appendix E-28). As currently proposed, this stipulation would allow subsistence users access to the goose molting area via oilfield facilities. Increased access is one of the major concerns regarding leasing in the goose molting area, because pedestrians and boat traffic are highly disturbing to the birds. In its current form, the stipulation is rendered ineffective, and poses an unacceptable risk to goose populations. This stipulation must be modified to prevent the use of oil and gas facilities for the purpose of increased access, subsistence activities included. 025

Miscellaneous

Citations 026

Numerous citations are missing from the literature cited section, making it difficult to check original sources for appropriateness of interpretation.

When citing unpublished data from FWS employees (e.g., Balogh, King, Larned, Martin), we prefer the citation "unpublished data" to "pers. comm."

Organization 027

Chapter IV, Environmental Consequences, is extremely difficult reading. Some sections have a great deal of repetition, and the sheer volume of material makes the comparison of Alternatives difficult. Consideration should be given to restructuring the chapter by resource type, similar to the summary, Table II.D.2.

Research and Monitoring 028

The DEIS is vague regarding the need for research and monitoring in relation to oil and gas development. Appendix A briefly describes current wildlife inventory work, but does not acknowledge the need for initiating new efforts specific to evaluating the impacts of oil and gas development. A comprehensive research and monitoring plan may be premature, but the DEIS should provide some indication of an expanded effort, should oil and gas leasing occur. Some examples (not a comprehensive list) of appropriate wildlife-related studies are provided below.

It will be necessary to collect additional data on bird distribution and habitat associations in order to plan facility layout in a manner which minimizes disturbance and loss of habitat value. Habitat use and densities of poorly studied taxa, such as shorebirds and loons, are needed. The existing inventory of waterfowl and raptors should be maintained and expanded. In consultation with the Spectacled Eider Recovery Team, research and monitoring necessary for the conservation of spectacled and Steller's eiders should be expanded. 028

Completion of mapping a digitization of National Wetland Inventory maps for NPR-A would be useful in meeting the regulatory requirements of the Clean Water Act, and as a supplemental geographic data set to be used in conjunction with vegetation cover maps now in preparation.

Other inventory and monitoring efforts should be directed at evaluating the effectiveness of stipulations and environmental protection measures. Baseline data on environmental contaminants should be collected prior to development. Additional data on aircraft disturbance to birds are needed. The impact of human activities on predator/scavenger populations should be monitored, as well as the impact of facilities on distribution and movements of caribou.

Consideration should be given to integrating inventory and monitoring efforts through an inter-agency task force, in cooperation with industry. It would be appropriate for funding to come from both the public and private sector. Research and monitoring should be coordinated with evaluation of the effectiveness of lease sale and permit stipulations, and enforcement.

SPECIFIC COMMENTS

Section I, Introduction, Background, Figure I-5, Page I-7. The figure showing the planning area with Inupiaq place names is excellent. An EIS summary in Inupiaq would be advisable and consistent with BLM's goal of working with the Inupiat people. 029

Section II, Alternatives, Land Use Emphasis Areas, Spectacled Eider Nesting Concentrations, Page II-2. Based on a preliminary correction factor for observer bias obtained in 1997, the North Slope spectacled eider population is estimated to be 14,300, not 6,500 (W. Larned, FWS, unpublished data). 030

Section II, Alternatives, Interrelationships, Subsistence Advisory Panel, Page II-39. Revise as follows, "The exact membership of and method for creating the panel will be determined by BLM in consultation with the NSB, the State of Alaska, and the FWS ~~Subsistence Division~~. 031

Section II, Alternatives, Table II.D.2e-1. Comparisons of Impacts for Alternatives A-E, and the Cumulative Case, Pages II-41 to II-71. The comments pertaining to this table also apply to the corresponding portions of Section IV, and should be addressed there, as well.

Cumulative Case, All Resources, Alternatives A-E. The reader has not been introduced to the concept of the cumulative case at this point in the document. A description of the cumulative case should be included in the discussion of Alternatives (pp.II-19 to II-20). The rationale for the analysis should be consistent and clear. For most resource categories, no description of cumulative effects are provided, only an estimate of the contribution of NE NPR-A activities to some (unspecified) total. 032

Vegetation, Alternatives B -E. As described in Section IV (Effects, Alternative B, Vegetation, Development, Material Sites, p. IV-C-13), the analysis seems to ignore effects of gravel mining that occur outside the planning area. This is inconsistent with the purpose of the document, which is to evaluate the effects of the proposed action. If a gravel mine is developed to support oil and gas activities in the Planning area, the impact should be assessed regardless of the location of the mine. 033

Birds, Alternative A. Moderate increases in boat traffic and other human activities on the Colville River could negatively influence nest success of raptors. 034

Birds, Alternative B. There is scant evidence to support the statement that "displaced individuals are likely to use adjacent undisturbed habitats." This statement is apparently based on the conclusions of Troy and Carpenter (1990). For opposing views, see Post (1990) and Mofoteet et al. (1996). The validity of Troy and Carpenter's conclusions is open to question, in part because of the small sample size upon which they were based (eight individual birds of three species that 035

were displaced and renested nearby). The DEIS implies that these results can be extrapolated to all Coastal Plain species at all scales of habitat loss, which is clearly beyond the scope of the referenced study. In previous comments, the FWS suggested an alternative approach to predicting the population impacts of habitat loss. The EIS should present a range of predicted impacts under assumptions ranging from 0-100 percent success for continued nesting of displaced individuals. This approach would better represent the scientific uncertainty surrounding the population effects of habitat loss. 035

Birds, Alternative E. The risk of oil spills to birds is greater in those portions of the Planning area where birds occur at higher concentrations. The goose molting area, where up to several thousand birds may be present on a single lake, is a prime example of such an area. Since leasing of the goose molting area is the distinguishing characteristic of Alternative B, it is not logical to conclude that "oil spill effects are not expected to be significantly greater than Alternative B." Impacts of disturbance to molting geese should be specified. 036

Birds, Cumulative Case. Illogically, the predicted effects under the cumulative case are less than those described under Alternative E. It is stated that effects under the cumulative case would be "limited primarily to occasional disturbance from aircraft activities...." This is simply not credible. Issues such as habitat loss, disturbance from ground activities, contaminants, and changes in predator populations are ignored. The conclusion is in conflict with the analysis for mammals, which predicts (p.IV-G-9) an increase in arctic foxes, and negative impacts on birds. 037

Terrestrial Mammals, Alternative B. The text is this section which predicts displacement of bears is inconsistent with the text on p. IV-C-28 which predicts attraction of bears. Potential effects on arctic fox (described on p. IV-C-29) should be included here. 038

Terrestrial Mammals, Cumulative Case. This section seems to be an inadvertent duplicate of the discussion under Alternative E. This error only compounds the confusion surrounding the conceptual basis for the cumulative case. 039

Marine Mammals, Alternative B-E. As noted in text (p. III-B-45), polar bears generally den within 25 miles of the coast. One would expect that potential for impacts to denning bears would increase along with the predicted level of human activity in this zone. It is not reasonable that predicted impacts for alternatives with leasing would be the same as those for Alternative A, the no-leasing alternative. 040

Marine Mammals, Cumulative Impacts. The potential cumulative impacts of oil and gas activities to marine mammals, particularly polar bears, should not be dismissed. Seismic operations coincide with maternity denning and may preclude polar bears from using prime denning habitat, or displace maternal polar bears and their cubs from active dens, resulting in a loss of net recruitment into the population. No quantitative data are available on the cumulative effects of potential habitat loss or degradation, or a sustained loss of annual recruitment of animals into the population over time. Cumulative impacts from multiple sales within NPR-A, 041

combined with ongoing activities at existing fields and proposed future lease sales adjacent to and offshore of the NPR-A as well as across the North Slope region pose a concern for the southern Beaufort Sea population. 041

Endangered and Threatened Species. Alternative B. Although much remains unknown regarding the relationship between human activity and predators, the threat is grossly understated. The following revision is suggested: "Improper containment or disposal of refuse at support camps ~~could~~ **should** be expected to attract potential bird predators. ~~It is possible that~~ An increase in predators ~~could~~ may result in the loss of eggs, chicks, or even adult eiders." 042

Endangered and Threatened Species. Alternatives C-E. The document states that "The potential effects on spectacled and Steller's eiders from oil and gas activities are expected to be essentially the same under this alternative as under B." This is not credible, given the greater extent of area affected (particularly in the area of relatively high spectacled eider density) and the increase in activity forecast under Alternatives C-E. 043

Endangered and Threatened Species. Cumulative Case. It is stated that "Cumulative effects are likely to be greater on the Arctic Slope spectacled eider population than on the Arctic Slope Steller's eider population." This is true only if one considers exclusively the number of individuals impacted, but ignores the relative impacts at the population level. As the population of Steller's eiders is much smaller than that of spectacled eiders, impact to one pair of Steller's eiders would be much more significant (on a population level) than impact to several spectacled eiders. See also comments above on "*Birds, Cumulative Case*," relative to the focus on aircraft disturbance. 044

Section III. Physical Characteristics, Terrestrial Environment, Mineral Potential, Coal Resources, Page III-A-2. The sentence beginning "If you take..." is not grammatically correct and is unclear. 045

Section III. Description of the Environment, Biological Resources, Birds, Page III-B-11. At least 85 bird species can be expected to occur annually in the planning area. In addition to the 75 species listed in earlier drafts, the following 11 species should be included: green-winged teal, spectacled eider, Steller's eider, Say's phoebe, American robin, northern shrike, yellow warbler, Wilson's warbler, fox sparrow, white-crowned sparrow, and Smith's longspur. The period of residence for migratory species is generally May to September, rather than May to November. Revise as follows: "Accurate census figures are lacking , but several shorebird species (Table III.B.4-1), **Lapland longspur**, and presumably other passerines ~~other than the Lapland longspur~~ are present at **in equal or greater** abundance levels than the species **surveyed from the air**. 046

Section III. Description of the Environment, Biological Resources, Birds, Habitat Types, Page III-B-11. Revise as follows: "...and wetter portions of the cover type termed "saltmarsh" habitat by other authors (e.g., Derksen, Rothe, and Eldridge 1981; Johnson et al., 1996) also would be ~~included here~~ **classified as aquatic**." 047

Section III. Description of the Environment, Biological Resources, Birds, Goose-Molting Habitat, Page III-B-11. The goose molting LUEA covers approximately 2000 km^2, rather than the 2,000,000 km^2 indicated. This section should include the information that brant depart the inland lakes after they regain flight, and move to coastal areas. 048

Section III. Description of the Environment, Biological Resources, Birds, Table III.B.4-1. Page III-B-12.

King Eider. Including 1997 data (U.S. Fish and Wildlife Service unpublished data from Bill Larned, Migratory Bird Management) the updated data for king eider are as follows. The coastal plain population is estimated at 25,716, 8, 418 of which are within the planning area, for an estimated density of 0.65/km^2. The DEIS neglects to point out that the planning area includes the highest breeding densities for this species recorded in Alaska. 049

Raptors. Numbers of nesting rough-legged hawks far exceed those of gyrfalcons, yet rough-legs are listed as "uncommon" and gyrfalcons as "fairly common." Data provided by the FWS is sufficient to provide an estimated population size for peregrines. Also, there is no source cited for the raptor information, though sources are cited for the other information on the table. 050

Glaucous Gull and Arctic Tern. The population estimate for the tern is roughly twice that of the gull, yet the tern is listed as "fairly common" and the gull is listed as "common." 051

Section III. Description of the Environment, Biological Resources, Birds, Figure III.B.4-1, Page III-B-13. This meaning of this figure is obscure. The caption should read, "Overlap of High Density Areas for Selected Water Birds." The legend and/or the text should list the taxa and years of survey upon which this map is based. The intent of this figure to identify "diversity hot-spots" is commendable, but if it is not presented clearly (including the limitations of the underlying data), it should be deleted. 052

Section III. Description of the Environment, Biological Resources, Birds, Figures III.B.4-2, 4-8, 4-10, and 4-11. Pages III-B-16 ff. The data for these maps were obtained from a distinct survey of molting geese, not from a "breeding pair survey" as indicated in the legend. 053

Section III. Description of the Environment, Biological Resources, Birds, Figure III.B.4-7, Page III-B-21. As noted in earlier comments, this figure gives a misleading impression of both the numbers and distribution of brood-rearing geese in the planning area. The data on goose broods from which this figure is derived are collected incidentally to the primary survey objectives, which are to enumerate molting adults. Two species are represented: greater white-fronted goose and brant. White-fronted geese breed in low densities across much of the planning area, and are not restricted to the area shown in this figure. Brood-rearing surveys for brant, conducted by ABR Inc. for the North Slope Borough have identified other locations with greater numbers of birds; these data have been made available to the EIS team. The referenced figure should be 054

deleted, and either replaced with a figure that represents the North Slope Borough's data or simply described in text. 054

Section III. Description of the Environment. Biological Resources. Birds. Loons and Waterfowl. Brant. Page III-B-23. The maximum number of brant using the Goose Molting Habitat LUEA is listed in text as 23,500, and in Table III.B.4-2 as 27,035. 055

Section III. Description of the Environment. Biological Resources. Birds. Loons and Waterfowl. Brant. Page III-B-23. The first paragraph, left-hand column, should be revised as follows: "Distribution of brant within the goose-molting area is not uniform. Over 80 percent of the brant used the 30 lakes with the highest among-year average number of birds, and over half the birds used 10 lakes between Teshekpuk Lake and Cape Halkett. Counts of several thousand have been recorded on the most heavily used lakes. Individuals tend to return to the same lake in successive years (Bollinger and Derksen, 1996)." 056

Section III. Description of the Environment. Biological Resources. Birds. Loons and Waterfowl. Greater White-fronted Goose. Page III-B-23. The discussion fails to convey to the reader that this species (as opposed to other geese) occurs at low to moderate densities across most of the planning area. Higher densities of white-fronted geese are found in the goose molting LUEA, in comparison to other portions of the planning area, but use of the LUEA is over-emphasized given the broad distribution of breeding birds. 057

Section III. Description of the Environment. Biological Resources. Birds. Loons and Waterfowl. Other Geese. Page III-B-27. Revise first sentence in this section as follows: " Several hundred Canada geese were found nesting along banks and bluffs of the Colville River above Umiat by Kessel and Cade (1958) as far down-river as Ocean Point, and more recently they have been found nesting on bluffs along the Colville (Kessel and Cade 1958, U.S. Fish and Wildlife Service, unpublished data)." 058

Section III. Description of the Environment. Biological Resources. Birds. Loons and Waterfowl. Ducks. Page III-B-27. The second sentence in this section ("Distribution of some species...) attempts to convey a rather complicated concept, and is probably not understandable to most readers. The focal question of interest is whether any species are unusually abundant in the planning area relative to the Arctic Coastal Plain as a whole. It is misleading to express this concept as a demonstration of uniform distribution across the coastal plain, since there are strong habitat-related patterns of distribution. The conclusion that the listed species are present in the planning area at a level of abundance similar to the Coastal Plain as a whole is unsupported by objective analysis. For king eiders, the difference between the proportion of the population in the planning area (about one-third of total) is almost certainly statistically different from the expected proportion under the assumption of uniform distribution (about one-quarter). Either the data should be analyzed statistically and results clearly expressed, or the text should be deleted. 059

Section III. Description of the Environment. Biological Resources. Birds. Loons and Waterfowl. Ducks. Page III-B-27. The importance of the planning area for king eiders needs more emphasis. The northeastern portion of the planning area supports the highest breeding density for this species in the State. This is a species of concern, as some indications of declining populations have been obtained, primarily through migration counts at Barrow. 060

Section III. Description of the Environment. Biological Resources. Birds. Loons and Waterfowl. Ducks. Page III-B-27. In the paragraphs describing oldsquaws and pintails, comparisons between densities derived from aerial surveys (described as "average density") are inappropriately compared with densities derived from ground surveys of Derksen et al. (1981). The survey methods are not comparable and the comparison is more misleading than informative, and should be deleted. As suggested in comments on earlier drafts in progress, density estimates derived from a variety of sources could be relegated to a table. 061

Section III. Description of the Environment. Biological Resources. Birds. Shorebirds. Page III-B-35. In the first paragraph of the section, reference to Table III.B.4-2 is incorrect. It appears that no table in the DEIS pertains to nesting chronology of shorebirds. 062

Section III. Description of the Environment. Biological Resources. Mammals. Figure III.B.5.a-1. Page III-B-40. This figure is difficult to interpret and misleading. It is misleading to represent caribou use areas as if they stopped at the NPR-A border. This information would be best portrayed in two separate figures — one could show general use areas for the three North Slope herds, and the other could show the details of calving locations in the Teshekpuk Lake area. Alternatives to the black cross-hatching should be considered. 063

Section III. Description of the Environment. Biological Resources. Mammals. Wolves. Page III-B-43. Reference to Fig. III.B.5a-2 is incorrect. No wolf data are presented in the referenced figure. 064

Section III. Description of the Environment. Biological Resources. Marine Mammals. Figure III.B.5.b-1. Page III-B-44. Replace the text in the brackets next to "Polar Bear Maternity Den Locations (1972-91)" with "(1972-94)." Replace the word "huntings" in the figure legend with the word "hunters." Several known den locations are missing from the map. The FWS has provided data to the EIS team which should be used to update the figure. 065

Section III. Description of the Environment. Biological Resources. Marine Mammals. Polar Bear. Page III-B-45. Revise as follows: "The Beaufort Sea population (from Point Barrow Icy Cape to Cape Bathurst...)." 066

Section III. Description of the Environment. Biological Resources. Marine Mammals. Polar Bear. Page III-B-45. Revise as follows: "Recorded den locations from 1972 to ~~1991~~ 1994 are indicated on Figure III.B.5.b-1." 067

Section III. Description of the Environment, Biological Resources, Marine Mammals, Polar Bear, Page III-B-45. The following sentence is unclear: "The clumped distribution shown in Figure III.B.5.b-1 may be related to the greater topographic relief east of 146°59" west longitude or to weather, ice conditions, and prey availability." The area east of 146°59" is not shown on the map. We recommend deleting the sentence, or expanding the map. 068

Section III. Description of the Environment, Biological Resources, Marine Mammals, Polar Bear, Page III-B-46. In the final paragraph of this section we recommend adding the following text after the second sentence: **"In 1988, the Inupiat of the North Slope Borough and the Inuvialuit of Canada ratified an agreement that ensures that harvests of polar bears do not exceed the replacement rate of the southern Beaufort Sea stock. Alaska Natives are implementing these terms through self-regulation. The Fish and Wildlife Service and Canadian Wildlife Service provide technical assistance in supporting this agreement."** 069

Section III. Description of the Environment, Biological Resources, Endangered and Threatened Species, Page III-B-46. The introductory paragraph inaccurately implies that there is doubt whether Steller's eiders occur in the planning area. Revise as follows, "The endangered bowhead whale occurs seasonally in the Beaufort Sea adjacent to the planning area, **and** the threatened spectacled ~~eider occurs~~ **and Steller's eiders occur** seasonally in the planning area. ~~and the threatened Steller's eider may occur seasonally in the planning area.~~" 070

Section III. Description of the Environment, Biological Resources, Endangered and Threatened Species, Spectacled Eider, Page III-B-47. Recent analysis, including 1997 survey data, indicates a declining trend in the North Slope population of spectacled eiders (USFWS unpublished data). The following text should be inserted: "Survey data from 1993-1997 indicate a decline in this population of 10-13 percent/year. This rate of decline is comparable to that documented for spectacled eiders on the Yukon-Kuskokwim Delta in the late 1980s; variation in survey timing, however, may explain some of the calculated trend (U.S. Fish and Wildlife Service, unpublished)." 071

Too much detail is provided regarding the population on the Yukon-Kuskokwim Delta, which is likely to confuse the reader. 072

The North Slope population estimates are presented in a confusing manner. The TERA's (1995) estimate of 20,000-30,000 is provided first, then FWS survey estimates from Larned and Balogh (unpublished), which are in the range of 5,800-9,300. It is suggested that TERA's estimate corroborates Larned and Balogh's work, when in fact the results appear to be in conflict. The order in which the data are presented could give the impression that TERA's estimates are more reliable, when in fact they are not. We recommend that TERA's results (which are outdated and based on the unrealistic assumption that Prudhoe Bay densities are typical of the entire Arctic Coastal Plain) be deleted. If both estimates are provided, then a more detailed description of methods is needed, being careful to note that Larned and Balogh's results are based upon much more extensive surveys, and are therefore more likely to provide a reliable estimate for the North Slope as a whole. 073

The 1997 aerial survey yielded an index of 5,817 birds, uncorrected for visibility. A preliminary study of observer bias indicated that observers were seeing about half of the birds present. Using that information to correct the raw estimate of numbers, we now estimate the North Slope population at 14,300. This estimate differs from the estimates for previous years, because a visibility correction factor has been applied. 074

Section III. Description of the Environment, Biological Resources, Endangered and Threatened Species, Spectacled Eider, Page III-B-47. Balogh's (1997) statement concerning the impact of survey timing should be deleted. This topic is covered by text provided for insertion in the first paragraph of this section (see above). 075

Section III. Description of the Environment, Biological Resources, Endangered and Threatened Species, Steller's Eider, Page III-B-49. Annual estimates from Bristol Bay are unnecessary. It is sufficient to provide the maximum number, noting that this also serves as the minimum global population estimate. 076

The date of proposed listing is irrelevant. Also, the FWS did not list the Steller's eider as threatened, only the Alaska-breeding population. 077

The number of Steller's eiders breeding on the Yukon-Kuskowim Delta is irrelevant, as is the number seen in North Slope surveys in 1986-88. 078

This document cites ARCO 1996 as the source of information on the range of Steller's eider on the North Slope. The original references should be cited, or the FWS documents that have repeatedly been cited up to this point. 079

Only *one* female with young was seen at Prudhoe in 1993. 080

The following statement is unclear, "Reproductive success generally is low with occasional good years, suggesting that productivity is highly dependent on adult survival." 081

We suggest that this section be rewritten and organized around the following key issues:

1) protected status, with date of final rule only;
2) range and numbers of the species on the North Slope, in Alaska, and globally;
3) general ecology of the species;
4) a discussion of vulnerabilities of the species to disturbance or other relevant factors, such as information from Barrow on the influence of ravens and gulls on Steller's eider productivity, or discussions of work at Prudhoe.

Section III. Description of the Environment, Social Systems, Recreational and Visual, Sightseeing, Page III-C-46. The description of wildlife viewing opportunities is inaccurate and 082

in conflict with other portions of the document. The document appears to be promoting bird-watching opportunities north of Teshekpuk Lake, because this area contains "the highest concentration of geese..." Although not a problem at current use levels, increased sight-seeing in this area could result in unacceptable levels of disturbance to molting geese, and should be discouraged. 082

The Beaufort Sea coast is alleged to offer "excellent opportunities to view marine mammals, specifically spotted seals, belukha, and gray whales, and walruses." As described earlier in the DEIS (Page III-B-43 to III-B-46), gray whales and walruses are extremely rare offshore of the planning area, spotted seals are uncommon in the Beaufort Sea and known concentration areas are outside the planning area. Belukha whales, while reasonably numerous in the Beaufort Sea, generally migrate far offshore and are not often seen from land. 083

Section III. Description of the Environment. Social Systems, Recreational and Visual, Tourism, Page III-C-46. The prediction that few tourists will leave the immediate vicinity of villages seems in conflict with the description of recreational opportunities that precedes this section. 084

Section IV. Environmental Consequences. Basic Assumptions, Table IV-A-1, Page IV-A-2. Footnote 1 refers to an appendix that does not exist. 085

The caption for this table states that "Fields discovered under Alternative B are too far from Alpine [on the Colville River delta] to share production infrastructure and are, therefore, noncommercial. Fields discovered under Alternative C could be located close enough to Alpine to share infrastructure and could be commercial under these circumstances." This analysis is flawed. New oil fields would have to be within 25 miles of the proposed Alpine field in order to share Alpine infrastructure (ARCO 1997: 4-182). Portions of the planning area within 25 miles of the proposed Alpine field would be leased under Alternative B, although much of the area within this radius is contained within the Kuukpik Entitlement LUEA. Under Alternative B, leasing of the Kuukpik Entitlement LUEA would be deferred until Kuukpik (Native village corporation) lands are selected, rather than leased with royalties held in escrow. The analysis appears to treat this deferral as a deletion. This is erroneous, however, because the remainder of those lands would be available for Federal lease after Kuukpik Corporation land is selected. Furthermore, deferral may be incorporated into other alternatives as a result of comments from the public. It is unreasonable to base any comparison of oil and gas potential of Alternatives B and C on the basis of the deferral alone, and the net result is an unjustifiably pessimistic characterization of oil and gas potential under Alternative B. 086 087

Section IV. Environmental Consequences. Basic Assumptions, Table IV-A-1.b-6, Page IV-A-27. The preceding comment regarding assumptions associated with Alternative B are also applicable here. 088

Section IV. Environmental Consequences. Effects, Alternative A. Water Quality, Effectiveness of Stipulations, Page IV-B-3. It is stated that effective protection for vegetation requires a

minimum snow cover of 10 inches for seismic operations. The DEIS needs to explain why the stipulation applied to seismic operations specifies a requirement for 6 inches of snow cover. 089

Section IV. Environmental Consequences. Effects, Alternative A. Birds, Effects of Disturbance, Effects from Aircraft Operations, Page IV-B-8. The discussion of aircraft disturbance should be revised, in consideration of the following. 090

The conclusion that brant responded most severely to flights at intermediate altitudes is poorly supported by the literature (Jensen 1990, Derksen et al. 1992). The conclusion that disturbed brant moved at a rate five times that of undisturbed birds should be treated with caution, as movement rates of the two groups were influenced by factors unrelated to disturbance. It should be noted that it is not possible to verify the predictions of the referenced brant disturbance model with regard to weight loss. As Ward and Stehn (1989) discuss in regard to similar work conducted at Izembek Lagoon (Alaska Peninsula), "...if brant are able to adjust their forage intake, the detrimental influence of disturbance on energetic balance will readily be minimized." The ability of molting birds to compensate for lost feeding time is unknown, and weight loss predictions are, therefore, theoretical.

The studies at Izembek did not conclude that brant exhibited "a greater response to helicopters than fixed-wing aircraft under most circumstances." Three types of fixed-wing aircraft caused 50 percent flight response at greater distances and/or altitudes than a Bell 206B helicopter (Ward and Stehn 1989:113).

Many references are available on aircraft disturbance of waterfowl, raptors, and other species. A more thorough literature review would be preferable. There is additional information provided on p. IV-C-20 that would be relevant.

Section IV. Environmental Consequences. Effects, Alternative A. Birds, Effects of Disturbance, Effects From Ground-based Activities, Page IV-B-6. It is impossible for the reader to trace the origin of the predictions regarding disturbance of ptarmigans, gyrfalcons, and snowy owls in winter. The references supporting those predictions actually pertain to different species (e.g., bald eagles, waterfowl), and a variety of locations and seasons. The DEIS should evaluate the applicability of those results and state the basis for the precise predictions regarding the range at which birds would be disturbed. The assumption that birds may be displaced at distances of 700 feet to 0.6 mile from human activity forms the basis for predictions throughout the DEIS, and thus should be well supported. 091

Section IV. Environmental Consequences. Effects, Alternative A. Birds, Effects of Disturbance, Effects of Spills, Page IV-B-9. In the worst case, a fuel spill in a lake used by molting geese could affect thousands of birds, not hundreds. 092

093 Section IV. Environmental Consequences, Effects, Alternative A, Birds, Effects of Disturbance, Summary, Page IV-B-9 It is stated here and in numerous other instances, that "survey camps may disturb raptors and passerines for 3-5 days, but effects are expected to be negligible." Under some circumstances, a 3-5 day disturbance may be more than enough to cause nest failure, which would not be negligible. It is the type and intensity of disturbance that determines whether it will be negligible. A combination of education and active enforcement of permit conditions designed to protect nesting birds will likely be necessary to ensure an outcome of negligible impact to raptors.

094 Section IV. Environmental Consequences, Effects, Alternative A, Birds, Effects of Disturbance, Summary, Page IV-B-13. It is stated that "Spectacled eiders are widely distributed throughout the coastal plain portion of the planning area and are essentially absent from the area from October to May. Most nesting on the Arctic Slope occurs along this coastline, particularly west from the Sag River." This statement is very unclear and will likely lead to the misconception that nesting is confined to the coastline.

095 Section IV. Environmental Consequences, Effects, Alternative B, Birds, Effects of Disturbance, Effects From Construction Activities and Vehicle Traffic, Page IV-C-20. Summertime traffic and construction activities are neglected. Construction of facilities may occur in summer (as will be the case for the Alpine development).

096 Section IV. Environmental Consequences, Effects, Alternative B, Birds, Effects of Disturbance, Effects From Predator Attraction, Page IV-C-20. There is no evidence presented to support the hypothesis that predator attraction to oil and gas facilities "...is not expected to cause other than local concentration of predators affecting local breeding success." Gulls, ravens, and arctic foxes may congregate at artificial food sources in the oil fields in winter or early spring. If this behavior results in increased survival and/or fecundity, there will be a numerical response in both the adult and juvenile components of the predator populations. Depending on the scale of dispersal, the effect on bird breeding success could be widespread. Here and throughout, the potential impacts of altered predator-prey relationships have been unjustifiably minimized. If predator populations rise in response to human activity, the effects could reach far beyond the footprint of the development, and long past the lifetime of the oilfields.

097 Section IV. Environmental Consequences, Effects, Alternative B, Birds, Effects of Disturbance, Effects of Habitat Alteration and Loss, Page IV-C-21. The blanket statement that most displaced birds would use other available habitat is not well-founded. It would be better to analyze the range of impacts possible, taking into account the scientific uncertainty regarding habitat as a limiting factor for North Slope bird populations.

098 Section IV. Environmental Consequences, Effects, Alternative B, Birds, Effects of Disturbance, Effects of Habitat Alteration and Loss, Page IV-C-21. Only a tiny fraction of the gravel fill areas on the North Slope have been restored to usable habitat. There is no basis for assuming

098 that future gravel fills will be restored to usable wildlife habitat, and proposed stipulations accompanying the DEIS do not require restoration.

The DEIS selectively uses information from Troy (1988), and TERA (1993) to suggest that shorebirds are attracted to areas adjoining light-traffic roads. TERA (1993) also found that six of seven shorebird species were significantly less abundant near roads, and three species had significantly lower nesting densities near roads. Red-necked phalarope was the only species to occur, and nest, at higher densities near roads.

099 Section IV. Environmental Consequences, Effects, Alternative B, Birds, Effects of Disturbance, Effectiveness of Stipulations, Page IV-C-40. Stipulations 50 and 77 are included in this discussion, but are not applicable to this Alternative, according to Section II-7.

100 Section IV. Environmental Consequences, Effects, Alternative B, Terrestrial Mammals, Effects of Disturbance, Caribou, Page IV-C-27. A statement of the concerns of local residents regarding interruption of caribou movements resulting from snow drifts under pipelines is followed by the statement, "However, such an effect is expected to be temporary, with the caribou moving across the corridors when vehicle traffic has passed." The relationship of traffic to the issue of snow drifts is unclear. Conflicting opinions have been expressed in regard to the prevalence of snow drifts under pipelines; the EIS would be an appropriate forum in which to present conflicting views and attempt a synthesis.

101 Section IV. Environmental Consequences, Effects, Alternative B, Effects of Disturbance, Terrestrial Mammals, Effects on Grizzly Bears, Page IV-C-20. Recent information on grizzly bears in the oil fields gathered by the Alaska Department of *Fish* and Game should be incorporated into the discussion. Contact Dick Shideler, (907) 459-7283.

102 Section IV. Environmental Consequences, Effects, Alternative B, Threatened and Endangered Species, Effects From Aircraft Activities, Page IV-C-37. The statement attributed to Balogh, that "helicopters flown at [150 ft] do not cause [spectacled eiders] to flush." Originated with a personal communication from Declan Troy (TERA, Anchorage). The statement should be attributed directly to Troy, following confirmation.

103 Section IV. Environmental Consequences, Effects, Alternative B, Threatened and Endangered Species, Effects From Drilling Activities, Page IV-C-38. There is no evidence cited for the speculation that eiders may relocate a nest, abandon a nest, or relocate a brood in response to disturbance.

Revise as follows, "Improper containment or disposal of refuse could would attract potential bird predators such as the arctic fox, grizzly bear, ravens, and glaucous gulls. It is possible likely that an increase in predators, should it occur, could would result in the loss of eggs, chicks, or even adult eiders.

104 Section IV. Environmental Consequences. Effects. Alternative B. Threatened and Endangered Species. Summary. Page IV-C-39. It is stated that "Due to relatively low density of eiders in the area, substantial disturbance is not expected to occur and is likely to be limited to within a few kilometers of the activities." The low density of spectacled eiders is relevant to predicting the number of eiders likely to be disturbed, but not to the severity of disturbance or the range at which birds will be disturbed.

105 Section IV. Environmental Consequences. Effects. Alternative B. Subsistence-Harvest Patterns. Page IV-C-46. The DEIS describes effects due to onshore oil developments at Prudhoe Bay that have affected subsistence harvests. The effects described in the DEIS are an indirect result of increased wage employment made available through projects and services funded by the North Slope Borough. Another effect not described in the DEIS in this section, but very important, has been changing subsistence harvest areas of Nuiqsut residents. There is some discussion of this issue later in the DEIS, with some excellent examples from Nuiqsut residents, but this discussioo also needs to be included on page IV-C-46 under effects that have already occurred from Prudhoe Bay development. Sverre Pedersen (ADF&G Subsistence Division) has indicated in personal communication that Nuiqsut residents have altered their use patterns around Prudhoe Bay. This was substantiated by Nuiqsut residents' comments later in the DEIS. It would be useful to compare the mapping of Nuiqsut subsistence use areas done by Pedersen in the 1970s with the maps recently created by the North Slope Borough to see what changes might have occurred.

Another issue not dealt with on page IV-C-46 is that of access. Nuiqsut residents now have access to a winter "road" to Prudhoe Bay. A road can provide access to resources, as in the case of the Haul Road which brings hunters up to the North Slope who would otherwise most likely not be there. The winter road from Nuiqsut has also enhanced access to Prudhoe Bay. The close proximity of Nuiqsut to Prudhoe Bay also confers a higher proportion of Nuiqsut residents to work in Prudhoe Bay than residents of other North Slope communities, thus providing more money to the community. In the winter these workers can travel by road. Increased employment has many ramifications in the community and on subsistence hunting and fishing, both positive and negative.

106 Section IV. Environmental Consequences. Effects. Alternative B. Subsistence-Harvest Patterns. Effects on Communities. Nuiqsut. Page IV-C-55. Taqulik Hepa's official position with the North Slope Borough should be included in the reference to her testimony at the Nuiqsut Public Scoping Meeting.

107 Section IV. Environmental Consequences. Effects. Alternative C. Sociocultural Systems. Effects on Barrow, Atqasuk, and Nuiqsut. Page IV-D-21. The discussion regarding the effects on subsistence harvests for residents of Barrow, Atqasuk, and especially Nuiqsut also needs to appear on page IV-D-19 under the conclusion for subsistence. Reduced access to subsistence resources and permanently changing subsistence harvest areas are expected to be long-term and should not be ignored nor down-played. Nuiqsut will be particularly vulnerable, with potential

development surrounding the community. This should be discussed in the conclusion for subsistence on page IV-D-19. These comments also apply to Alternatives D and E. 107

108 Section IV. Environmental Consequences. Effects. Alternative E. Birds. Oil and Gas Exploration and Development Activities. Page IV-E-9. The discussion of potential effects to molting geese is incomplete. A detailed discussion of the issue, with additional background information is attached as an appendix to these comments. This section also includes a number of inaccuracies and contradictions, the most important of which are detailed below.

- It is stated that "...a large proportion of disturbing events are expected to result in effects from which individuals would recover within hours to 1 day." This statement is ambiguous and misleading. Although molting geese will almost certainly resume normal activities within hours following a single disturbance event, the cumulative effect of many disturbance events could affect the physiological condition of the birds, completion of molt, and survival.
- The existence of interlake areas removed from habitats used by molting geese does not assure minimal disturbance. Molting geese respond to aircraft at distances of several kilometers, and to pedestrians at distances greater than 500 m, and even the imposition of the proposed buffers would not completely eliminate these disturbing stimuli.
- Troy and Carpenter's (1990) study of birds displaced by oil and gas development is not applicable to molting geese. The study concerned nesting shorebirds and longspurs.
- It is erroneous to conclude that the proposed stipulations would "...remove most potential for disturbance or desertion." The workshop at which the stipulations were devised operated under a clear set of guidelines: to provide maximum protection for geese, while still allowing extraction of oil and gas resources. Thus, the recommended stipulations represented a compromise between two conflicting goals. The efficacy of the stipulations in eliminating disturbance to molting geese is not assured.

109 Section IV. Environmental Consequences. Effects. Alternative E. Birds. Conclusions. Page IV-E-10. *Effects under this Alternative are predicted to be "...essentially the same as for Alternative* B, except in the Goose Molting Habitat LUEA." Given the greater area to be leased, and increased level of activity expected even outside the Goose Molting Habitat LUEA, this is not a reasonable prediction.

110 Appendix E. Figure 6. Page E-35. The colored area in Smith Bay, and associated buffer, is an error of interpretation and should be deleted. The scale bar in this figure does not seem to correspond to the scale of the map, as indicated by Township boundaries.

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TERA. 1995. Distribution and abundance of spectacled eiders in the vicinity of Prudhoe Bay, Alaska, 1991-1993. Report by Troy Ecological Research Associates for BP Exploration (Alaska) Inc., Anchorage, AK. 18 pp.

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ATTACHMENT 2

PROSPECTS FOR CONFLICT BETWEEN OIL DEVELOPMENT AND WATERFOWL IN THE TESHEKPUK LAKE REGION, NPR-A

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March 10, 1998

DESCRIPTION OF THE TESHEKPUK LAKE GOOSE MOLTING AREA

Physical Environment

The Teshekpuk Lake goose molting area is located north and east of Teshekpuk Lake (Figure 1). This 2000 km^2 area encloses approximately 200 lakes used regularly by large numbers of geese while they undergo wing molt (Derksen et al. 1981, 1982; Bollinger and Derksen 1996), during which time the birds are flightless for approximately 24 days (Taylor 1995).

The attraction of large numbers of geese to this area cannot be completely explained, but use has been related to some aspects of the physical and biological setting. The goose molting area is characterized by the presence of large, oriented thaw lakes. The prevalence of these lake basins in the Teshekpuk area has been attributed to the presence of fine-grained, ice-rich sediments formed or modified in the most recent marine transgression to have affected the arctic coastal plain during the Pleistocene Epoch (Sellman et al. 1975). The basins, separated by high (up to 10 m) ridges, undergo repetitive cycles of lake formation and drainage (Britton 1967, Weller and Derksen 1979). Erosion of lake margins results in coalescence of neighboring lakes, which can result in full or partial drainage of the lake with the higher water surface elevation. Once drained, thaw settlement may resume and is followed by formation of secondary lakes within the original basin. The partially drained basins typically contain shallow lakes surrounded by a low shoreline vegetated with sedge and moss (Derksen et al. 1982) used by geese for resting and feeding. The favorable habitat characteristics that are hypothesized to attract geese include: large lakes with persistent ice floes, which function as islands for escape from terrestrial predators, adjacent habitat with sufficiently large patches of high-quality forage, relatively low numbers of predators, low levels of human disturbance, and proximity to coastal staging areas (Derksen et al. 1982, Weller et al. 1994).

Use by Geese

The Teshekpuk Lake goose molting area annually attracts 18,500-68,500 (x = 37,827) geese, based on surveys conducted from 1982-1996 (R. King USFWS, unpublished data). Brant, greater white-fronted geese, and Canada geese are present in large numbers, along with smaller numbers of snow geese (Table 1). The numbers of brant and the total numbers of all geese using this region exceed that of any known molting area, worldwide.

Table 1. Numbers of geese using Teshekpuk Lake Goose Molting Area, 1982-1996 (USFWS, unpublished data).

	All Geese	Brant	Gr. White-fronted Goose	Canada Goose	Snow Goose
Max. in Any Year	66,484	27,035	27,710	26,681	419
Max. on Any Lake	6,770	4,745	4,020	2,935	225
Mean for All Lakes	37,827	17,570	7,024	13,001	232
Highest Mean at Any Lake	3,386	2,505	513	1,018	20

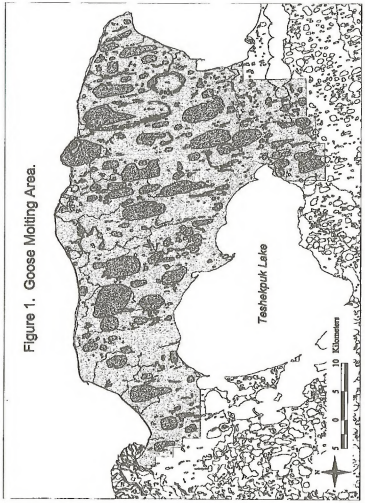


Figure 1. Goose Molting Area.

More is known about use of this area by brant than the other goose species. While the details likely vary among species, the broad outlines of brant molting ecology are probably applicable to other geese at Teshekpuk. Brant migrate to this area from breeding colonies in western and northern Alaska, Canada, and possibly Russia. Up to 22% of the Pacific flyway population (also known as "black brant") use this area on an annual basis. Most brant using the Teshekpuk Lake area are failed breeders while the remaining are non-breeding birds, primarily those of pre-breeding age (Bollinger and Derksen 1996). They arrive in the area from mid-June to mid-July. Most begin molt by July 4-10 (Derksen et al. 1979, Taylor 1995); however, some may begin molt as late as July 25. Thus, flightless brant are present in the area from late June to mid-August, with peak numbers in the latter third of July (Derksen et al. 1979, 1982; Taylor 1995). Distribution of brant among the 200 surveyed lakes is clumped, with an average of 57% of the brant using the 10 lakes with the highest among-year average number of birds, and 83% using 30 lakes (R. King, USFWS, unpublished data). Molting brant exhibit a marked tendency to return to the same lake year after year (Bollinger and Derksen 1996). After molt is complete the birds shift immediately to coastal areas (Derksen et al. 1982, Taylor 1993).

Physiological Aspects of the Molt Process

Brant body mass declines during wing molt to a varying extent among age, sex, and breeding classes, and among years. The decline in body mass is primarily explained by loss of lipid (fat) reserves, however, body protein reserves also declined (Taylor 1993). The decline in body reserves implies that abundance and/or quality of forage may not be sufficient to sustain molting requirements. Nutrients obtained via food intake may be insufficient to meet the energetic demands of molt, thus body lipid and protein reserves are likely used to offset the shortfall (E.J. Taylor, unpublished data). Brant at Teshekpuk may not be able to compensate for the energetic demands of disturbance by increasing their food intake (E. Rexstad, J.S. Sedinger, E.J. Taylor, pers. comm.).

POTENTIAL IMPACTS OF HUMAN DISTURBANCE

Behavioral Sensitivity

Molting geese react strongly to disturbance during their flightless period. Their behavioral responses include high levels of alertness, group response when any individual perceives danger, and mass movement from potentially threatening visual or noise stimuli (Jensen 1990, T. Rothe, pers. comm.). Derksen et al. (1982) reported that molting brant would not allow approach within 500 m, and that flocks responded to potential predators or human disturbance by moving to water. Flocks disturbed by low-flying aircraft moved to water, and in one case "a series" of aircraft disturbances caused a flock to move 3 km to the opposite side of a lake (Derksen et al. 1982).

Predicted Impacts

An increase in energy expenditure as a result of disturbance, coupled with decreased foraging time and depleted lipid and protein reserves, could have detrimental effects on the birds. These effects include increased duration of the flightless period (and susceptibility to predation), incomplete molt, and decreased capacity to migrate to coastal staging areas (Jensen 1990, Miller et al. 1994). Disturbance and fragmentation of habitat in the goose molting area could displace birds from traditionally favored lakes to inferior habitat, or result in over-crowding of undisturbed habitat with ensuing decline in availability of forage. Any and all of these impacts might result in a lowered survival rate.

A panel convened by the Bureau of Land Management in 1982 (Gilliam and Lent 1982) to evaluate the potential impacts of oil and gas leasing predicted the following impacts.

* Aircraft disturbance could result in reduced survival.
* Vehicle traffic may lead to displacement from favored habitats.
* Exposure to toxic contaminants (e.g., hydrocarbon spills) could result in appreciable mortality, because the birds are flightless.

EVALUATION OF PREDICTED IMPACTS

This discussion draws on experimental disturbance studies and empirical observations of geese in the existing North Slope oilfields to evaluate predictions relative to potential impacts of development. The discussion focuses mainly on brant (for which there are more complete data, as well as heightened concern for the population), but information for other geese is included also. The focal questions are:

* Will human disturbance displace birds from preferred habitats?
* Whether or not displacement occurs, will disturbance result in lower survival?

I have not made an independent evaluation of the risk posed by oil spills.

Physiological Implications of Aircraft Disturbance

Aircraft have been identified as one of the more disturbing stimuli to geese (Owens 1977, Belanger and Bedard 1989). Response of molting brant at Teshekpuk Lake was examined by Jensen (1990), Miller (1994) and Miller et al. (1994). Jensen (1990) reported on experimental overflights by Bell 206 helicopters. Duration of disturbance declined when helicopters flew above 1000 m, but there was no statistical difference in duration of disturbance over the range of altitudes below 1000 m. The great majority of disturbances lasted less than 500 seconds (~8 minutes), although there were a few instances in which disturbance lasted from 1500-2700 seconds (24-45 minutes). Jensen (1990) reported that larger flocks (>100) were more prone to disturbance, however, the statistical relationship was probably strongly influenced by two cases

with disturbance durations more than twice as long as the next largest record. In the absence of those two outlier points, it is possible that the relationship would not have been statistically significant. Jensen (1990) concluded that duration of disturbance decreased with increased lateral distance of the aircraft, and attenuated to a negligible level beyond 4 km lateral distance. Movement rates of radio-equipped birds subject to experimental helicopter disturbance were compared to a control population at an undisturbed lake. Jensen (1990) reported a rate of movement five times greater in the experimental birds compared to the control. This result is confounded, however, by the fact that the experimental population moved almost twice as much as the control population even in the absence of disturbance.

Miller (1991) used Jensen's behavioral response data to develop a model to predict the impact of helicopter disturbance to brant in terms of lost body mass. Miller based his model of behavioral response on unpublished data (from Jensen), which provided point estimates of disturbance duration, categorized by flock size, aircraft altitude, and proximity of the birds to the aircraft. He combined those data with information on the distribution of geese within the molting area to simulate the impact of helicopter traffic (at the rate of 10 flights per day and 50 flights per day) using a number of different routes. The response variable was predicted weight loss of individual brant, classified as "light (10-120 g)," "moderate (130-270 g)," or "heavy (> 270 g)." The algorithm to convert activity to weight reduction is based on an unpublished model (McKnight and Taylor 1989). In general, the energy expense (in kilocalories) of disturbed activity (e.g., running, swimming) was estimated and converted to loss of lipid using a standard conversion factor of 1 g /13 kcal (Miller 1991). Unfortunately, as noted by Miller (1994b), "A threshold value for weight below which brant might experience significantly lower survival has not been established." Furthermore, the model's predictions relative to weight loss have not been tested against field data. The biological significance of his results, therefore, are not easily interpreted.

Displacement from Preferred Habitat

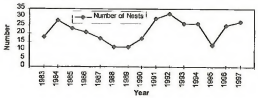
The potential for displacement can best be assessed by examining the data from the existing North Slope oilfields. Displacement could occur at various scales, ranging from withdrawal from a large area corresponding to the extent of oilfield activity, to localized loss of habitat resulting from gravel fill.

There is no evidence that geese have withdrawn from the general oilfield region. Lack of baseline data preclude evaluating the hypothesis that pre- and post-development numbers are equivalent, but one can evaluate the hypothesis that oilfield development may lead to region-wide displacement. All four species of Arctic Coastal Plain geese occur regularly in the oilfields: greater white-fronted goose, Canada goose, brant, and snow goose. White-fronted geese are the most widespread, nesting throughout the oilfields, but they are particularly abundant in the Kuparuk area, where nesting densities can be high (2-3.5 nests/km²) (Mallorett et al. 1996). Canada geese are uncommon, and limited as a nesting species to Prudhoe Bay and vicinity. Snow geese nest at a single colony (Howe Island, with approximately 370 breeding pairs), which is by far the largest breeding colony on the Alaska Arctic Coastal Plain. Brant nest in small colonies throughout the oilfields, from the coast to 20 km inland, and rear broods primarily in

coastal salt marshes. The minimum number of nests in the oilfield region has varied from 300-500 between 1989 and 1992 (Stickney and Ritchie 1996). None of the four goose species has abandoned a portion of its range as oilfield infrastructure expanded.

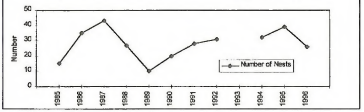
Particularly in the Teshekpuk Lake area, where hundreds or thousands of birds use a single lake, local displacement would be of concern. It is difficult to assess the possibility that there have been local changes in distribution in response to siting of facilities in the existing oilfields. There has generally been insufficient pre-development baseline data to detect changes in local distribution, but there are several relevant case studies for nesting colonies. The Howe Island snow goose colony persisted after the construction of the nearby Endicott Project in 1985, which introduced oilfield facilities to within 2.5 km of the main colony, and intersected some preferred brood-rearing habitat. After construction, snow geese continued to use brood-rearing areas adjacent to the Endicott Road, although they largely abandoned areas within 200 m of the road during the 2 years (1985 and 1986) when there was heavy construction-related traffic (Burgess et al. 1992). The colony has experienced catastrophic breeding failure in 4 of the last 8 years, probably due to predation by arctic foxes and/or brown bears.

Figure 2. Number of Brant Nests at the Surface Colony, Prudhoe Bay.



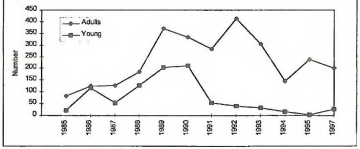
A small nesting colony of brant adjacent to the Surface Pad at Prudhoe Bay has been monitored since 1983. The nesting area is surrounded by roads, pads and pipelines, including a heavily traveled road 600 m to the west. Although nest numbers have varied between 13 and 32 (ABR Inc., unpublished data), no long-term decline is evident (Figure 2). Another small nesting colony close to the CPF-3 facility in the Kuparuk oil field has been monitored since 1985, the year in which the facility was constructed. Brant nested in a wetland basin at a distance of 600-1800 m from the CPF-3 facility (although a few nests were within 200 m of the access road). Nest numbers have varied between 10 and 43, but no long-term decline is evident (Figure 3).

Figure 3. Number of Brant Nests at the CPF-3 Colony, Kuparuk Oilfield.



If the behavior of nesting brant in the oilfields is not representative of molting birds at Teshekpuk Lake, the results described above are irrelevant, and the discussion should be restricted to molting geese. Members of all four species of geese molt in the oilfield region, most in conjunction with brood-rearing. During the brood-rearing/molting period, an average of 1,900 brant (range 900-3200, 26% to 48% goslings) are present in the oilfield region (Stickney and Ritchie 1996). Banding studies in the Kuparuk oilfield (1991-1997) have demonstrated that at least 90% of the broods found between Oliktok and Kavearak points moved into the oilfield region from the Colville River delta nesting colonies (Martin and Obritschkewitsch 1997). Two of the most important brood-rearing areas in the oilfields, Oliktok (in the Kuparuk field) and the Put River mouth (Prudhoe Bay) are also the closest to centers of human activity. Brant (up to 650 birds) at Oliktok feed and loaf in areas within 0.5 km of buildings and within 100 m of the Oliktok Road and associated elevated pipeline. All (several hundred birds per year) of the Colville-origin birds that move east past Oliktok cross the road-pipeline corridor at least once, and birds that remain at Oliktok cross back and forth several times in a season (U.S. Fish and Wildlife Service, unpublished data). Birds using the Put River mouth are within an area of intense industrial development. Flocks of brant regularly use habitat within 500 m of gas-handling facilities that produce high noise levels, although the average distance from the birds to the facility center was 800-900 m (Anderson et al. 1992). Brood-rearing brant in this area regularly use habitat 200-300 m from a high-traffic road (Murphy et al. 1990) and sometimes move back and forth under an elevated pipeline (B.A.Anderson, ABR Inc., pers. comm.). There has been no decline in use of the Put River site by adult brant since 1985 (Figure 4; Murphy et al. 1986, 1987, 1988, 1989, 1990; A. A. Stickney, ABR Inc, *pers. comm.*). Low numbers of brant goslings at the Put River since 1990 are likely related to poor production at the main source colony (Howe Island).

Figure 4. Brant Use of the Put River Mouth During the Brood-rearing Period.



Behavioral Response to Ground Activities in the Oilfields

For reasons of tradition or lack of alternative habitat, birds might continue to use an area even though they are subjected to a level of disturbance that is ultimately detrimental to their health and survival. Several oilfield studies have attempted to address the behavioral response of waterfowl to disturbance, notably the Lisburne Monitoring Program for geese and swans (Murphy and Anderson 1993) and the Endicott snow goose monitoring program (Burgess et al. 1992). Road traffic was the most frequent source of disturbance to geese but in most cases elicited mild reaction (no group movement away from the disturbance). Approximately 10 % of vehicle passes (n=50,000) elicited visible behavioral reactions in geese (Murphy and Anderson 1993). In 1989, brood-rearing brant reacted visibly to 1 of 2,400 passes by small vehicles (such as light trucks) and 11 of 1000 passes by heavy vehicles (Murphy et al. 1990). Large and noisy vehicles, and those of unusual shape, such as boom trucks, elicited the strongest response. For all four species, reactions to vehicles were mild at distances greater than 300 m (Murphy and Anderson 1993). Humans on foot were a greater source of disturbance; in three cases, pedestrians at distances between 450-600 m caused at least half of large brood-rearing groups to move (Murphy et al. 1990). Very few instances of boat-related disturbance were recorded, but in one case, a boat 1 km away caused a flock of brant to swim 2.5 km, displacing them from their feeding area for over an hour (Murphy and Anderson 1993).

Activity budget studies indicated that brood-rearing snow geese spent more time in alert postures and walking when they were close to the road relative to their behavior when they used brood-rearing areas further from the road, and in response to higher levels of traffic on the road bisecting the brood-rearing area (Burgess et al. 1992). Activity budgets of geese and swans in the Lisburne area were not strongly affected by the level of disturbance (Murphy and Anderson 1993). The researchers suggested that the birds had adjusted their position relative to the sources of disturbance, such that they were beyond the distance threshold at which significant differences in behaviors would have been recorded with changing human activity. Thus, the birds' response may have manifested itself in (unmeasured) displacement, rather than differences in activity budgets (Murphy and Anderson 1993).

In summary, the oilfield studies indicated that behavioral responses to routine traffic and activity attenuated in the range of 200-400 m from the source of disturbance. Energetically expensive responses (walking, running, swimming) were rare at those distances, and were usually associated with unusual disturbance stimuli. In contrast, humans on foot and boats alarmed geese at distances up to 600-1000 m.

Growth Rates and Demographic Parameters

Behavioral response data are imperfect indicators of impact, because the true significance of alterations in activity patterns depends on the degree to which behavioral changes influence body condition, and ultimately, survival. These relationships are seldom known, and difficult to model (Burgess 1992). Recent studies (U.S. Fish and Wildlife Service, unpublished) have focused on variables such as growth and survival, which in contrast to activity budgets, have clear population implications. Brant goslings in the oilfields grew more rapidly than goslings on the Yukon-Kuskokwim delta (Sedinger and Obritschkewitsch, *in prep.*) Also, goslings captured at a site close to facilities (Oliktok) grew at similar rates to goslings captured at sites more remote from oilfield facilities. This is an important result, because gosling growth rates can be a sensitive indicator of the quality of the brood-rearing environment (Sedinger et al. 1997). On the Yukon-Kuskokwim delta, gosling size was positively correlated with survival and adult size, which, in turn was correlated with greater fecundity (Sedinger et al. 1995). Despite possible (but unmeasured) interference with normal feeding behavior and habitat use resulting from human disturbance, gosling growth rates in the oilfields compare favorably to those from the Yukon-Kuskokwim delta. Differences in habitat quality and/or competition for food likely explain the difference in growth rates between the North Slope goslings and Yukon-Kuskokwim delta goslings.

Banding studies of brant that rear broods in the oilfields indicate that adult survival rates are statistically similar to those of birds from the Yukon-Kuskokwim Delta (Sedinger and Obritschkewitsch, *in prep.*). Thus, any potential disturbance in the oilfields does not appear to be reducing survival of adults relative to the population in western Alaska.

Nest success in the oilfields may be indirectly impacted by changes in predator activity related to human activity. Molting geese are vulnerable to predators, so an increase in predators at Teshekpuk may have significant impact. One of the hypothesized advantages of molt migration is use of areas with fewer predators (Sterling and Dzubin 1967).

RATIONALE AND EFFECTIVENESS OF PROPOSED STIPULATIONS

Although study results indicate a general ability of nesting geese to habituate to some aspects of oilfield-associated disturbance, potential sources of conflict have been identified.

- Displacement of birds within 400 m of facilities and activities.
- Strong behavioral reactions to the following: some aircraft disturbances; loud, large, and/or unusual shaped vehicles; humans on foot; boat traffic.
- Low nest success (attributed to predation) could be depressing population growth.

This section discusses the rationale of stipulations proposed in the DEIS, and their effectiveness in addressing the issues above. It must be recognized that until the Record of Decision on the EIS is reached, there is no commitment to implement these stipulations. Furthermore, the DEIS commits to inclusion of only a few of the stipulations as terms of the Lease Sale. It is unclear how firmly the Record Of Decision would compel managers to include the proposed stipulations as conditions in future permitting actions.

Aircraft Operations

The DEIS proposes two stipulations that would impose seasonal restrictions regarding aircraft operations in the goose molting area. Stipulation 54 would suspend helicopter overflights from June 15 to August 20. Stipulation 55 would restrict fixed-wing aircraft takeoffs and landings to two round-trips per week to aircraft facilities within the goose molting area from June 15 to August 20. Thus, the worst-case scenario for an individual bird would be exposure to 4 flights per week. This level of aircraft activity is well below the range modeled by Miller (1994) and also would involve a different type of aircraft. Helicopters are often assumed to be more disturbing than fixed-wing aircraft, but this conclusion has not always been supported by field data (Ward and Stehn 1989; Burgess et al. 1992; Murphy and Anderson 1993). For modeling purposes, it is safest to assume that fixed-wing flights would be equally disturbing. A preliminary analysis suggests that in a reasonable worst-case scenario (a bird in a large flock subjected to four overflights per week for all 4 weeks of flightlessness, all within 0.5 km lateral distance and at less than 1000 m altitude) cumulative weight loss attributable to the aircraft overflights would be under 20 g. This analysis does not incorporate the scenario of multiple airstrips or overflights that are not associated with oil and gas activities. Detailed analysis should be undertaken by a qualified modeling team in order to evaluate the effectiveness of the proposed mitigation.

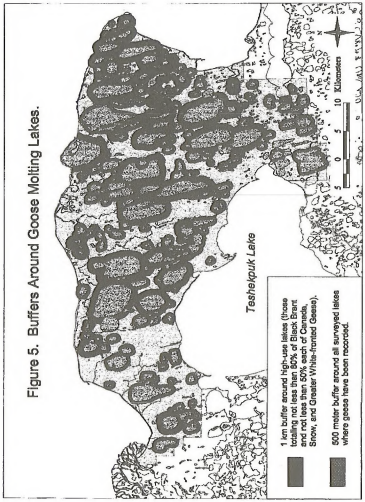


Figure 5. Buffers Around Goose Molting Lakes.

Siting of Facilities

Stipulation 25 would establish a 500 m buffer around all lakes used by geese, and a 1 km buffer around 40 "high use" lakes, which include those that (on average) support 83% of brant, 69% of Canada geese, 58% of snow geese, and 73% of white-fronted geese (Figure 5). Facilities other than pipelines would not be permitted within these buffers. The exclusion for pipelines is based on the observations in the oilfields that brood-rearing brant and other geese tolerate, and cross under, elevated pipelines. The minimum 500 m buffer width was based on the observation that routine vehicle traffic had little effect on geese beyond 300-400 m (see above). The 1 km buffer is somewhat arbitrary; it may or may not be sufficient to reduce disturbance from pedestrians or boat traffic, and it is certainly not sufficient to eliminate aircraft disturbance.

Ground Activities

Stipulation 33 requires that facility layout shall incorporate features (e.g., temporary fences, siting/orientation) that screen or shield human activity from view of any goose molting lake within 3 km. The rationale for this stipulation is the observation that pedestrians are among the most disturbing influences, and that the maximum range of this effect is unknown. Stipulation 77 generally prohibits off-pad activities during the goose molting period; this provision is also intended to eliminate highly disturbing pedestrian traffic.

Stipulation 78 prohibits public access (except by subsistence users) to goose-molting areas by way of, or through the use of, oilfield facilities, and proposed Stipulation 60 would require removal of roads, airstrips, and other gravel fill upon field abandonment so as to render them unusable for enhanced access into and within the goose molting area. The purpose of these provisions is to limit uncontrolled use of the goose molting area during, and after, the life of the oilfield. The exception for subsistence activities was inserted by BLM staff, not by the panel which drafted the stipulations. Unless some agreement can be reached with the local subsistence users, the geese will be unprotected from disturbance caused by activities such as boating, even if hunting activities are not directed at the birds. If the oilfield facilities enhance access to this area (which is remote and currently little used), substantial disturbance could occur.

Stipulation 34 suspends major construction activities (sand/gravel extraction and transport, pipeline and pad construction) during the goose molting period. The intention of this stipulation is to eliminate the use of large and noisy equipment while geese are in the area, based on the data that show such activities can be much more disturbing than routine traffic by light vehicles.

Stipulation 50c requires conveying to minimize the daily duration of traffic disturbance from May 20 to August 20 (this applies to the caribou calving season, as well as to the goose molting period) and 50d requires minimization of road traffic during the molting period.

Waste Disposal

Stipulation 1 requires handling and disposal of putrescible waste in a manner which prevents the attraction of predators. Increased populations of gulls, foxes, and bears in the Teshekpuk area

could have a devastating impact, both in direct mortality, and because of the disturbance predators cause. It is critical that this stipulation receive adequate enforcement. Neither State regulations nor company policies have been successful in eliminating the problem of predator attraction in the oilfields.

CONCLUSION

The potential for aircraft disturbance will be diminished if the proposed stipulations are adopted. The aircraft disturbance model should be used to predict the behavioral response of molting geese to aircraft use at realistic rates (e.g., four per week per route). Predicted weight loss attributable to disturbance should be determined. Interpretation may not be straightforward, however, because the birds' ability to compensate for lost feeding time and energy expense is not known. Also, the biological significance of light weight loss (*sensu* Miller 1991) is not known. Taylor's (1993) work indicates that the birds may be in such a depleted nutritional status, that any increment of disturbance could be harmful. It may not be possible to make a confident prediction regarding the physiological and survival implications of anticipated aircraft activity.

The potential for disturbance from ground activities would be lessened by the application of the proposed stipulations. If brant at Teshekpuk behave similarly to those in the oilfields, then there is a reasonable expectation that they will continue to use the area with minimal disturbance from oilfield activities on the ground, provided that the proposed stipulations are adopted and enforced. It cannot be assumed, however, that the available data from the oilfields are adequate to predict all future impacts. It is necessary to conduct research on oilfield impacts which are poorly understood (such as the numerical and functional response of predator populations), in order to formulate effective management strategies. Also, the extent to which birds in the oilfields are an appropriate model for birds at Teshekpuk is questionable. There are some notable differences in circumstances:

- Teshekpuk is predominantly a molting area, not a breeding area. In contrast, the majority of oilfield birds are engaged in brood-rearing during the molt period, a difference which may be reflected in behavioral response or physiological state.
- Flock sizes at Teshekpuk are larger, on average, and this may affect the birds' behavior, as larger flocks are believed to react more strongly to disturbance.
- Birds exposed to oilfield activity as goslings are likely to be more habituated to human activity than the birds that molt at Teshekpuk, which may have no prior experience with oilfield-related activities.
- The numbers and concentrations of birds at Teshekpuk far exceed that of the oilfields. Mean number of brant on the most heavily used lake at Teshekpuk exceeds the average annual population (adults and young combined) in the oilfields, and geese occur on most lakes within the molting area.

Habitat characteristics, including dominant forage species, at Teshekpuk are different from the saline-influenced habitats used by oilfield brood-rearing groups. Competition for food may be more intense at Teshekpuk.

The implications of these differing circumstances for predicting impacts are not well understood. It is not clear, for instance, whether molting adults which are also attending broods differ from failed breeders in their sensitivity to disturbance or physiological vulnerability. A subset of the birds at Prudhoe Bay are failed breeders in moderately large flocks (>100 individuals), and thus represent close analogs to Teshekpuk birds, but no studies have compared behavior of birds of differing breeding status at Prudhoe Bay. The differences in circumstances reduce the level of confidence in predicting future impacts from current information. Given the uncertainties, a cautious approach is warranted.

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1752-001
The text in Section IV.F.8.b has been revised to include additional clarifying information concerning potential effects of oil and gas development on the Goose Molting Habitat LUEA.

1752-002
The Preferred Alternative excludes the Goose Molting LUEA from leasing during the life of this IAP. However, the problem of attraction of wildlife to waste-disposal sites and the impacts on birds and other wildlife in the remainder of the planning area is a significant concern to BLM. Enforcement of Preferred Alternative Stipulations 1, 2, and 3 and other stipulations is a high priority to BLM. The BLM will enforce these and other permit stipulation through its Inspection and Enforcement Program and will follow up on all problems that arise to the maximum extent possible.

Please also see Response 1194-010.

1752-003
We believe the scenarios we offer for future development in the planning area are realistic. The projections of the amount of oil in the area are based on the best information available. Should discoveries be made that show these oil-resource projections to be too low and, as a result, our environmental consequences analysis is no longer valid, we would not be able to lease additional acreage without conducting another environmental review.

The projections of the infrastructure that might result if discoveries are made are based on oil priced at as much as $30 a barrel. Rarely has the price reached that level. Between 1982 and 1997, oil prices ranged from $13.43 and $34.10 and over the last century, the inflation-adjusted average price for a barrel of oil has been slightly more than $16. Development based on any price other than the highest price spikes likely will be far more modest than what we have evaluated in the Environmental Consequences section of the IAP/EIS.

In addition, oil exploration and development technology has become less intrusive on the environment. We have analyzed impacts based on current technology, but it is probable further technological advances will continue to reduce impacts.

Finally, while oil and gas lessees have certain rights to extract the oil that they have leased, their plans for development are subject to environmental review and approval. This offers an avenue to mitigate unexpectedly high impacts.

1752-004
The text in Section IV.F.8 has been revised to clarify potential population-level effects on molting geese.

1752-005
The Preferred Alternative calls for convening a raptor workshop to review the scientific literature on disturbance to raptors, and to identify potential additional mitigating measures preliminary to developing a Colville River Management Plan. The management plan would be for the Colville River Special Area and some areas proposed to be added to the Special Area largely because of their value for raptor habitat. The participants in the workshop and in the Colville River Management Plan team will extend beyond BLM personnel.

1752-006
The Preferred Alternative recommends adding portions of the Kikiakrorak River, the Kogosukruk River, and tributaries of the Kogosukruk that are important for raptor habitat to the Colville River Special Area. In addition to prohibiting nearly all surface occupancy associated with oil and gas development within 1 mi of the bluffs or banks of these rivers, the Preferred Alternative also includes a special consultative provision for an area within 2 mi of these bluffs. It also prohibits gravel roads connecting to a road network outside the planning area. Finally, the Preferred Alternative recommends working with other landowners on a Colville River Management Plan to include discussions regarding the potential creation of a Bird Conservation Area.

1752-007
From the ecological perspective, the amount and distribution of wetlands based on National Wetlands Inventory (where available) and recent Landsat Thematic Mapper imagery has been formulated. This information was not complete at the time the draft EIS was printed, but it is included in the final EIS.

To meet the requirements of Section 404, Clean Water Act, any future NEPA document would describe the project's components, identify the type and amount of wetlands and other waters affected by each alternative, describe anticipated impacts, and discuss mitigating measures that could minimize impacts to these resources.

1752-008
We have revised the boundaries of the Spectacled Eider Breeding Range to conform to this recommendation (see Fig. II.B.3).

1752-009
There are a number of reasons why Alpine is considered to be a good representation for future fields in the NPR-A (see Responses 1652-031 and 1660-081). When the final IAP/EIS is published, construction for Alpine will be under way (see Response 1851-036).

We agree that it would be more realistic to model a range in expected footprint for new oil fields and have revised Section IV.A.1.b(4)(c).

Please also see Preferred Alternative Stipulation 48.

1752-010
The need for permanent roads, as opposed to seasonal ice roads, will depend on the unique characteristics of each project. Explanations of why "roadless" development is assumed to be the likely strategy for new development is in Response 1851-011. Although the construction of a permanent road across NPR-A is exceedingly unlikely, we have revised the cumulative analysis to include a road connecting to the existing road network on State land east of NPR-A (see Sec. IV.H).

1752-011
The purpose of the IAP/EIS is to analyze reasonable and foreseeable development scenarios for future activities in the NE NPR-A Planning Area. A detailed discussion of all aspects of the Alpine development project is beyond the scope of this IAP/EIS. At this time, investigations to identify gravel sources in the NPR-A have not been conducted but presumably will be, if discoveries are made in the sale area. Reconnaissance mapping of surficial deposits is contained in numerous studies published by the USGS, and citations to these studies will be included in the final IAP/EIS. The operations in areas adjacent to the planning area are included in Cumulative Case analysis.

We have not studied the economic feasibility of gravel transportation in the NPR-A; therefore, we cannot closely define the limits of gravel transportation from existing sites east of the Colville River. Under Section IV.A.1.b(4)(c) (Gravel Requirements), we have discussed several alternative scenarios, including:
1. gravel extraction from existing sites;
2. development of new sand/gravel mine sites within the NPR-A;
3. possible barging of pad-construction materials to coastal staging areas;
4. processing bedrock for construction materials;
5. alternative designs (year-round ice pads; composite all-season pads); and
6. re-using gravel from previous Husky drill sites.

Final approved plans for new field developments in the NPR-A will depend largely on site-specific conditions and the location relative to sources of construction materials.

1752-012
The extent to which birds displaced by facilities would occupy adjacent habitat has been revised to reflect a greater suite of possible effects when birds are displaced by placement of gravel structures; see Sections IV.C.8.b(2) and IV.F.8.b. The text in Section IV.C.10.b.2 has been revised to address the relatively small amount of habitat lost to eiders from placement of fill for roads and pads.

The potential effect of development on predator populations and their avian prey has been revised to clarify the time factor aspects of predator effects on birds; see Section IV.C.8.b(1)(g). The text in Section IV.C.10.b(2) regarding improper containment or disposal of refuse attracting potential bird predators which could result in the loss of eggs, chicks or adult eiders has been revised.

1752-013
Because the comment does not state the particular aspects of the statement used frequently in this analysis to indicate that changes in population parameters caused by activities/pollution incidents associated with oil and gas development are difficult to separate from natural fluctuations in these parameters, no specific response is possible. The comment cites breeding success as an example of a parameter that can be measured without regard to population fluctuations, and so should not be placed in the category of "not detectable above natural population fluctuations". However, breeding success of a population certainly fluctuates from year to year. If breeding success in a regional population of *species x* varies from 30 to 60 percent over a span of years, and then individuals in this population are exposed to an oil spill or drilling pad construction followed by a year where breeding success is 25 percent, can we say this lower success definitely is a result of the impact (some birds were killed or some displaced from the immediate area), or is it simply a low point in the natural population fluctuation of this parameter that would have occurred anyway. Consideration of many other factors is necessary before it is possible to unequivocally say an adverse factor is having a specific effect. For this reason, we opted to phrase some conclusions in a manner suggesting that in most instances we lack the long-term quantitative information and methodology to interpret whether a given data value was caused by an oil and gas activity, or is just another point on a natural plot of the parameter. There are virtually no species for which a causal relationship between a potentially adverse event and long-term effect has been demonstrated.

Regarding the comment that recovery time for a goose population after an oil spill (such values are not included in this document) could be calculated from existing population models, it still is likely that as a population approaches ("recovers") its original average number, it will become increasingly difficult to discriminate each successive change from the natural variation that is occurring and thus the precise endpoint of the "recovery."

The commenter certainly is correct in pointing out that we will only be able to determine impacts and recovery accurately when long-term datasets and refined methodology become available.

Please also see Response 1660-092.

1752-014
The potential for cumulative effects caused by multiple disturbance incidents has been added to Section IV.F.8. Any factor that repetitively occurs to a varying extent could be considered "chronic." The fact remains that virtually no studies have determined the effect of chronically recurring factors on any population.

1752-015
This comment comparing the effects under Alternative B and Alternative E takes statements for the comparisons out of context. First, the statement referenced from Alternative B in the comment was taken from a discussion on the effects from construction activities, where potential effects from vehicular traffic was discussed rather than from the summary for Alternative B. It would be more appropriate to compare the summary for Alternative B with the summary for Alternative E. Second, the statement referenced from Alternative E is only the first sentence of the summary. The activities that are considered most likely to affect eiders are discussed later in the summary. The following paragraphs, which are taken from information in the summaries of Alternatives B and E, provide a more appropriate comparison of potential onshore effects of activities on the spectacled eider.

The summary for Alternative B states that spectacled eiders are not expected to be affected by discharges, seismic surveys, drilling, oil-spill-cleanup activities, construction activities, vehicle traffic, or oil spills. (Because there is no surface discharge of drilling wastes, the activities are conducted in the winter, and/or no leasing will occur in the northern portion of the planning area under this alternative.) Spectacled eiders breeding, nesting, or rearing young in coastal habitat may be overflown by support aircraft and may experience temporary, nonlethal effects.

The summary for Alternative E states that spectacled eiders are not expected to be affected by discharges, seismic surveys, construction activities, and oil spills, essentially the same as under Alternative B. (That's because there is no surface discharge of drilling wastes and the activities are conducted in the winter. In the case of oil spills, spills generally are fairly small and mostly occur on drilling pads. Those spills that reach the surrounding area generally cover a small area. Due to the small size of the spills and the very close proximity to drill pads, it was considered that eiders were not expected to be affected by spills. A statement has now been added Section IV.C.10.b(2)(c) in the text to be consistent with the FWS March 1998 biological opinion that eiders within 200 meters of a spill occurring off a drilling pad may be affected.) The summary then states that the potential effects as a result of noise and disturbance associated with oil and gas activities, such as aircraft traffic and perhaps drilling of development and production wells and oil-spill-cleanup activities, are likely to increase because all of the eider breeding and nesting areas in the planning area are in areas available to oil and gas activities under this alternative. (Exploratory wells will be drilled during the winter, but development and production wells may be drilled during the summer months.)

1752-016
In the Preferred Alternative, all stipulations are to be lease-sale stipulations.

1752-017
Impact-analysis specialists have reviewed their statements to eliminate reference to inappropriate stipulations. Impact-analysis statements have factored in additional information about their practical effectiveness. For more on enforcement of stipulations, please see Response 1194-010.

1752-018
The comment is addressed in Preferred Alternative Stipulation 24a; this incorporates the proposed changes regarding polar bear dens.

1752-019
Stipulations 20a, 64, and 81 (Alternatives A-E) have been incorporated into the Preferred Alternative as Stipulations 24a, 61, and 77, respectively.

1752-020
The proposed changes have been integrated into the Preferred Alternative Stipulations. The introductory paragraph of Preferred Alternative Stipulation 24 clarifies that restrictions "a" through "n" apply to overland moves, seismic work, and similar use of heavy equipment on unroaded surfaces "during the winter season." Preferred Alternative 24b expands the period during which motorized ground-vehicle use will be minimized to include the gyrfalcon nesting period.

1752-021
Oil and gas leasing and the construction of oil and gas facilities in the Goose Molting LUEA is prohibited under the Preferred Alternative. Consequently, Stipulation 30 (Alternatives A-E) has been deleted from the Preferred Alternative stipulations.

1752-022
Note that the stipulation at issue was erroneously identified as Stipulation 30 in the FWS's comments. Preferred Alternative Stipulation 56 incorporates proposed changes regarding cliffs identified as raptor nesting sites and a consultation requirement and altitude limitation when aircraft are within ½ mi of gyrfalcon nests during their nesting period.

1752-023
The Goose Molting LUEA is not available for leasing, and oil and gas facilities are prohibited in the Preferred Alternative. As a result, no stockpiling activities are anticipated near goose-molting lakes during the life of this IAP.

1752-024
Stipulation 59 (Alternatives A-E) and corresponding Preferred Alternative Stipulation 58 have been amended to include consultation by appropriate Federal, State, and NSB regulatory and resource agencies.

1752-025
Under the Preferred Alternative, oil and gas leasing and construction of oil and gas facilities in the Goose Molting LUEA are prohibited. Stipulation 78 (Alternatives A-E) consequently has been deleted from the Preferred Alternative stipulations.

1752-026
The document has been reviewed to ensure cited references are included in the bibliography.

1752-027
In planning the structure of the EIS, consideration was given to organizing Section IV by resources rather than by alternatives. Such an organization would benefit those readers who might wish to focus on one or more specific resources. However, the thought was that organizing Section IV of the EIS by alternatives would best convey the overall differences between the alternatives to the majority of the readers. The differences between alternatives is small for some of the resources. Reorganizing Section IV between the draft and final EIS within the schedule the Secretary has established for this process would be difficult.

1752-028
We have adopted many of the recommended suggestions in the final IAP/EIS. See Section II.F.7 for a description of the Interagency Research and Monitoring Team and the type of monitoring work we anticipate conducting.

1752-029
The BLM has worked closely with the NSB during this planning process It was through their assistance that we were able to produce the map you commend. Text in Inupiaq that is longer than a word or phrase, however, is neither appropriate nor necessary. Few people read more than short phrases in Inupiaq. Moreover, because of the help the Borough provided, we are confident that we have communicated effectively with the residents who are exclusively Inupiaq speakers.

1752-030
The text in Section II and Section III has been updated to reflect the 1997 population estimates for spectacled eiders on the North Slope. Both population estimates, one corrected for observer bias and one uncorrected for observer bias, have been presented in Section III.B.6.a.2. Because there is only one year of corrected population estimate and there are 5 years of uncorrected population estimates, we have used only the uncorrected 1997 population estimate in Section II.

1752-031
We have deleted "Subsistence Division" from the passage in the final IAP/EIS.

1752-032
Section II.D has been revised to introduce the reader to the Cumulative Case. Please also see Response 1851-025.

1752-033
Gravel resources are scarce within the borders of the Northeast NPR-A Planning Area. Depending on where in the planning area an oil field might be developed relative to local gravel/sand sources and sources outside the planning area, it may be more feasible to haul gravel in from outside the area. The sources outside the planning area may be new but more likely are existing material sites to the east. The analyses of impacts to vegetation in Sections IV.C through IV.F.6 acknowledge the possibility of exploiting existing material sites but base the quantitative analysis on a worst-case assumption. They estimate the acreage of vegetation that would be destroyed or altered within the planning area as the result of material site development, assuming there would be one material site for each oil field developed. If some or all of the gravel resources ultimately come from outside the planning area, the total acreage affected would be the same or less but correspondingly distributed between the planning area and other lands to the east. Material sites outside the planning area most likely would be within river floodplains, where vegetative cover may be naturally reduced or absent. The previous two sentences have been added to the text in Section IV.C.6.b(1)(a)3).

1752-034
As the comment states, moderate increases in activity on the Colville River could influence nest success of raptors. However, it is difficult to predict the threshold at which this would occur with the information that is available at this time. Regarding the peregrine falcon, the species for which most data exist, its population has been increasing with the current level of activity as noted in the text of Section IV.B.8. Insufficient information is available for other species to make any definitive statement.

1752-035
With regard to displacement of birds to alternate habitats following habitat alteration (usually burial by gravel, but also ice pad/road), certainly a variety of outcomes is possible. These include typical success in adjacent comparable habitat, no attempt to nest (loss of year's productivity), and lower fecundity/success/productivity or survival/recruitment in suboptimal habitat. The population outcome presumably is complicated by variable numbers of displaced individuals finding comparable habitat to occupy and, no doubt, variable success among those that do nest caused by behavioral factors such as territoriality and competition with individuals in the alternate area as well as differences in food availability and predation. At this time, we do not have adequate data to allow an accurate determination of effects at various levels of success for most species. As noted, successful nesting in undisturbed habitat could range from 0 to100 percent, but the area likely to be removed under this alternative (about 60 acres) even at 0 percent success would seem to imply a minor effect at the population level (e.g., semipalmated sandpiper = 16 birds/km^2 over most of the northeastern NPR-A = 4/60 acre tract), unless it concerned a rare breeder with specialized or limited habitat options and/or small population. Species in these categories would represent a low probability worst case, which is not appropriate to portray as an expected result. The text in Section IV.C.8.b(2) has been revised to clarify the statement regarding this situation.

1752-036
The conclusion of Section IV.H.8 has been revised to clarify the potential for an oil spill in the Goose Molting Habitat and comparison with Alternative B.

1752-037
The text has been revised (Sec. IV.H.8) to clarify specific and overall cumulative effects statements.

1752-038
Denning bears could be displaced by seismic activities near dens during fall and winter. Bears also may be attracted to camp facilities during the spring because of food odors. Arctic foxes are not expected to be adversely affected by oil development. Populations of foxes have increased on the oil fields compared to

adjacent undeveloped areas.

1752-039
The effects of cumulative oil development on terrestrial mammals, especially in the NPR-A, are expected to be very similar to those described under Alternative E. The draft EIS discusses past, ongoing, and reasonably foreseeable projects that may affect terrestrial mammals. The only conceptual issue discussed briefly is global warming, because there is evidence that it may be occurring in the Arctic (Anderson and Weller, 1996).

1752-040
Alternatives B, C, and D would include very little or no leasing along the coast of the NPR-A, and only one past den location inland along the Colville River is adjacent to NPR-A areas that may be leased under these alternatives. Most former denning sites were located within <10 mi of the coast (see Fig. III.B.5.b-1). Only activities under Alternative E are expected to potentially disturb polar bear dens.

1752-041
There is no scientific evidence that ongoing or past seismic activities have precluded polar bears from using prime denning habitats on the North Slope. Polar bears have shown considerable tolerance to seismic activities (Amstrup, 1993). Regulations under the Marine Mammal Protection Act that require oil companies to have Letters of Authorization to conduct activities where polar bear dens may be located apparently have minimized disturbance of denning polar bears. Future seismic operations are expected to comply with these measures and prevent excessive disturbance of polar bears.

Please also see Preferred Alternative Stipulation 24a.

1752-042
Please see Response 1752-103.

1752-043
Please see Response 1752-015.

1752-044
The rationale for that statement is based not only on the presence and relative density of both species in the planning area but also on their presence and relative density elsewhere on the North Slope (see Figs. III.B.6-1 and III.B.6-2). Steller's eiders appear to be relatively scattered on the North Slope, with no apparent areas of relatively high density. Within the planning area, eiders are present primarily outside of the area of highest oil and gas potential—the northern portion of the planning area, which is available for leasing under Alternative E—which should reduce the potential for effects to them. They are present in very low densities east of the Colville River, with no sightings shown in the Prudhoe Bay area and most of the Kuparuk area, where oil and gas activities are relatively intense. Spectacled eiders are present in some of the highest densities in the northern portion of the planning area, where the highest potential for oil and gas exists, and they are present throughout the northern portion of the coastal area in the Kuparuk and Prudhoe Bay area. They also are more likely to be disturbed by ground-impacting-management activities in the planning area, such as aerial wildlife surveys, which tend to be concentrated more in the areas where spectacled eider densities are highest. It is likely that there is a higher potential to affect spectacled eiders than Steller's eiders, certainly in terms of the numbers of individuals impacted. It would be very difficult to speculate which would suffer a greater impact in terms of impact to the population. From still another viewpoint that includes consideration of cumulative effects, the FWS Biological Opinion does not conclude that adverse effects are likely to be greater for either species. The opinion also concluded that jeopardy to the population of either species was not likely to occur, even if the species was completely eliminated from the planning area.

1752-045
The sentence in Section III.A.1.a(1)(d) has been revised.

1752-046
There are about as many lists of birds observed on the Arctic Slope as there are birders and investigators who have spent some time observing them. Few, if any, list exactly the same species because of the different areas examined by various investigators, the amount of time and seasons spent on the slope, and a certain amount of luck in finding rarer species. In the description of the northeastern NPR-A environment, species that generally are considered casual visitants, rare migrants, rare breeders, etc. were not included in arriving at the total of 75 (Sec. III.B.4). Those that are expected to be of fairly widespread occurrence and uncommon or greater abundance were considered. A few marginal species, especially those that may be more common along the Colville River than elsewhere, have been added to the total. Spectacled and Steller's eiders are considered in the section on threatened and endangered species.

The season of migratory bird presence in the NE NPR-A given in the section includes the early and late dates for all species, and extends from May to November. This includes those seabirds and/or waterfowl that are found on the Beaufort Sea into the early part of November.

Text Section III.B.4 has been revised to clarify relation of abundance of other passerines to the Lapland longspur.

1752-047
The text in Section III.B.4 has been revised to clarify the classification of saltmarsh habitat.

1752-048
The text in Section III.B.4 regarding the size of the Goose Molting Habitat LUEA has been revised. The text regarding post molting brant has been added to the brant discussion.

1752-049
King eider data, including the 1997 update, has been added to Table III.B.4-1. The text has been revised to indicate high king eider breeding density in the planning area.

1752-050
Table III.B.4-1 has been revised to indicate rough-legged hawks as common.

1752-051
The status of gulls and terns has been revised on Table III.B.4-1.

1752-052
The caption to Figure III.B.4-1 has been revised and the database added.

1752-053
The data source for Figures III.B.4-2, 8, 10, and 11 has been corrected.

1752-054
The caption for Figure III.B.4-7 has been revised to clarify the data used.

1752-055
The text in Section III.B.4 has been revised to reflect the numbers of molting brant on Table III.B.4-2.

1752-056
The text in Section III.B.4 has been revised to clarify use of lakes by molting brant.

1752-057
The text in Section III.B.4.a(4) has been revised to clarify greater white-fronted goose distribution.

1752-058
The text in Section III.B.4.a(5) has been revised to clarify Canada goose-nesting areas.

1752-059
The text in Section III.B.4.a(6) has been revised to clarify duck distribution.

1752-060
Statements indicating importance of planning area to king eiders are included in Section III.B.4.a(6).

1752-061
The text in Section III.B.4.a(6) has been revised to qualify aerial versus ground data for duck densities.

1752-062
The reference to Table III.B.4-2 has been removed.

1752-063
Figure III.B.5.a-1 focuses primarily on caribou habitats within the NPR-A boundary because this is where proposed oil and gas and other BLM activities would take place. The western part of the Central Arctic caribou calving range is shown because the NPR-A proposed pipeline routes would cross this range to connect with the Kuparuk River oil field pipeline (see Fig. IV.A.1.b-7). Other caribou habitats east or south of the NPR-A boundary would not be affected by the proposal.

1752-064
The text has been changed in Section III.B.5.a, Wolves, in response to this comment.

1752-065
Figure III.B.5.b-1 has been revised in response to this comment.

1752-066
The text in Section III.B.5.b.(4), Polar Bear, has been changed in response to this comment.

1752-067
The text has been changed in Section III.B.5.b.(4), Polar Bear, in response to this comment.

1752-068
The text has been changed in Section III.B.5.b.(4), Polar Bear, in response to this comment.

1752-069
The text has been revised in Section III.B.5.b.(4), Polar Bear, in response to this comment.

1752-070
The suggested revision has been made in the text in Section III.B.6.a.

1752-071
The recommended text has been included in Section III.B.6.a.(2).

1752-072
No change has been made in the text. The text contains only two sentences pertaining to the population of spectacled eiders on the Y-K Delta. Those sentences discuss population estimates on the delta from a historical perspective and the subsequent decline in that population. The species was listed as threatened due to a large decline in the North American population, which was due in large part to the decline in the Y-K Delta population. Because equivalent data to examine overall trends on the North Slope are not available, we believe that inclusion of data from the Y-K Delta provides useful information.

1752-073
The order of presentation of Larned and Balogh (1997) and TERA (1995) in Section III.B.6.a.(2) has been reversed in the text. The more current survey work by Larned and Balogh (1997) is now presented first. The text does not suggest anything but simply provides a statement made in the conclusion of TERA (1995). That statement is in quotes and it is clear that it is attributed to the author of the report, and not a suggestion in the EIS. The text includes a statement that such extrapolation probably is speculative because the Prudhoe Bay area represents only a small portion of the total spectacled eider habitat on the North Slope, and that densities of eiders in the Prudhoe Bay area are not likely to be typical of the entire coastal plain. We believe there is a value in presenting information from different studies. Different studies/authors may provide different and sometimes contradictory viewpoints. The two studies discussed in the text also look at different survey areas. The survey effort by TERA concentrates on the Prudhoe Bay area, whereas Larned and Balogh (1997) look at the entire Arctic Coastal Plain.

1752-074
Section III.B.6.a.(2) has been revised to reflect this information.

1752-075
Balogh (1997) has been left in the text. This was a statement made during the NPR-A Symposium Proceedings. We prefer to reference a document available to the public when possible rather than unpublished information.

1752-076
No change was made to the text. Because the information is available and provided by Mr. Larned, we prefer to keep it in the text. The information provides some indication of the annual variability of population estimates.

1752-077
The intent of the text was to indicate that the Alaska breeding population of Steller's eiders was listed as threatened. This was clearly stated in the first sentence of the paragraph. The third sentence of the text in Section III.B.6.a.(3) has been revised for better clarification. The Proposed Rule has been retained, because it contains pertinent information.

1752-078
No change has been made to the text. We believe information on Steller's eiders breeding on the Y-K Delta is relevant; it is the Alaska breeding population which has been listed as threatened. Information about the population on the North Slope certainly is relevant, because that is the location of the NPR-A. The brief discussion of eiders breeding on the Y-K Delta and the subsequent decline in that population provides some historical perspective. The species was listed as threatened due to a substantial decrease in the species' nesting range and due to a population decline, which was due in part to the decline in the Y-K Delta population. Because equivalent data to examine overall trends on the North Slope are not available, we believe that inclusion of data from the Y-K Delta and the numbers of eiders seen in North Slope surveys in 1986 to 1988 provides useful information.

1752-079
The original references, as cited in ARCO (1996), have been added to the text in Section III.B.6.a.(3).

1752-080
No change was made to the text. We refer you to three documents prepared by the Fish and Wildlife Service. The Fish and Wildlife Service Biological Opinions for both the Integrated Activity Plan for the

Northeast Portion of the National Petroleum Reserve-Alaska and the Proposed Beaufort Sea Oil and Gas Sale 170 and the Final Rule by the Fish and Wildlife Service listing the Alaska breeding population of Steller's eiders (62 *FR* 31748), state ". . .females with young were seen in 1993 near Prudhoe Bay. . ." These three references by the Fish and Wildlife Service support what is currently written in the text.

1752-081
It is not clear what the Fish and Wildlife Service wants, because some of the information suggested here for inclusion into the final EIS appears to be contradictory to some of the previous comments by the Fish and Wildlife Service. This section already has been reviewed by the Fish and Wildlife Service several times and their comments incorporated. We believe the information suggested for inclusion is already included in the text or is not pertinent for inclusion.

Information regarding the protected status of Steller's eiders is included in the text. The Proposed Rule has been retained in the text because it provides more historical information about the worldwide population of Steller's eiders in the 1960s than does the Final Rule. Information on range and numbers for spectacled and Steller's eiders in different parts of Alaska, including the Y-K Delta and the Arctic Coastal Plain, including breeding and wintering areas, are included in the text. Information is presented primarily for the State of Alaska. Global information has not been included except for information on spectacled eiders wintering in the Bering Sea and Steller's eiders wintering along the Alaska Peninsula. Information on the general ecology including breeding, nesting, and wintering areas; population estimates; habitat preferences; food items, etc. already are included in the text. Information on the potential effects of disturbance, predation, etc. are discussed in Section IV.C.10.b.

1752-082
We acknowledge your concern. The intention was merely to describe the recreational resource/opportunity. We believe the section does this. The affected environment section of an EIS is not the place to encourage or discourage any activity.

1752-083
We appreciate your input and have made appropriate changes to the text.

1752-084
We found no such statement on page III-C-46; however, such a statement did appear on page III-C-48 under the subsection "Tourism." Tourism was intended to refer to packaged or guided (sightseeing) tours that rely on commercial facilities for food and lodging. For clarification, we have deleted the section and subsumed its content under "Sightseeing." In general, the point we believe the Recreation and Visual section correctly makes is that despite some outstanding recreation opportunities afforded by the area's resources (e.g., the abundant wildlife), the remoteness, lack of roads, short summer season, and generally inhospitable environment will keep visitation at low levels and "concentrated" in the more accessible areas along major rivers and near developed facilities.

1752-085
An editorial change noted by the commenter has been made.

1752-086
It is true that a small portion of the lands west of the Kuukpik LUEA, postponed for leasing in Alternative B, lie within a 25 mile radius of Alpine. However, at the present time we do not know which tracts will be leased or where discoveries will be made. It would be fortunate for a new discovery to be located this close to an existing facility, but it is more likely that discoveries will be made beyond 25 mi in distance. We also believe that there are no strict limits for the maximum feasible distance for satellite field development. Generally, we would accept a 15- to 25-mi range as a representative limit, subject to a variety of site-specific factors.

1752-087
Please see Response 1670-003.

1752-088
Please see Response 1752-086.

1752-089
This issue was addressed in Response 1334-012.

1752-090
The text in Section IV.B.8.a(2) regarding experimental effects of aircraft has been revised for clarification. It should be noted that at a comparable altitude and lateral distance, helicopters disturbed greater percentages of brant than most fixed-wing aircraft.

Although there are a number of references concerning aircraft disturbance of birds, the five studies most relevant to this area and species are cited here.

1752-091
Relatively few studies have determined distances at which ground-based activities in winter would result in disturbance to birds. The values given in Section IV.B.8.a(1) are considered reasonable estimates for the groups to which the few winter residents belong and are derived from the publications cited and personal observations.

1752-092
While it is possible that one of the 10 lakes where the maximum number of brant present has been ≥1,500 at least once could be entered by a fuel spill, the likelihood is not necessarily very high. There are only five lakes where if all birds were killed, the term "thousands" would be an accurate descriptor. In assessing potential effects, an attempt is made not to present the worst case as the expected or typical effect. In this case, there are many more lakes where the maximum brant counted is many fewer than 1,500. Also, given the orientation of lakes in this area that suggests a prevailing wind direction, it would be rather unusual for spilled fuel, especially in this relatively small quantity, to contact all birds on a lake. The text in Section IV.B.8.b has been revised to clarify numbers of brant on lakes in the goose-molting area.

1752-093
In stating that effects of short-duration disturbance from camp activities are likely to be negligible, reference was being made to population-level effects rather than individuals. The text in Section IV.B.8.a(1) has been revised to clarify this point. The text following the referenced statement has been added to include potential effects on raptors, citing Ritchie (1987) wherein he found virtually no significant effects in nesting peregrines exposed to a variety of disturbance factors.

1752-094
The text in Section IV.B.10.b(2) has been revised to clarify spectacled eider nesting distribution where effects may occur.

1752-095
Contrary to the comment, summer vehicle traffic is included in Section IV.C.8.b(1)(e). The text has been revised to include summer construction activity.

1752-096
The text in Section IV.C.8.b(1)(g) has been revised to clarify the time factor aspects of predator effects on birds.

1752-097
The text in Section IV.C.8.b(2) has been revised to reflect a greater suite of possible effects when birds are displaced by placement of gravel structures.

1752-098
Regarding restoration of gravel-fill sites to usable habitat, referencing Section IV.C.8.b(2), Stipulation 59 (Alternatives A-E) requires that abandoned oil field sites be rehabilitated to the satisfaction of the BLM Authorized Officer in consultation with the ADF&G, ADEC, and NSB. At this point, the specifications for restoration would be determined by wildlife experts and others. Rehabilitation efforts at numerous North Slope areas and natural revegetation occurring under suitable conditions demonstrate that it is feasible to restore gravel areas to usable habitat (McKendrick, 1997, NPR-A Symposium Proceedings). In addition, Stipulation 40 (Alternatives A-E) requires gravel mine sites be designed to function as water reservoirs, if feasible. Also, Stipulation 60 requires that roads, airstrips, and other gravel fill be rendered unusable for access into Goose Molting Habitat. Presumably, this would be accomplished by disturbing the surface, which in turn would make natural revegetation and/or rehabilitation efforts more successful.

The text has been revised to clarify discussion of potential for birds displaced by gravel structures to nest in adjoining areas.

1752-099
Regarding the comment that Stipulations 50 and 77 (Alternatives A-E) do not apply to this alternative (discussed at Sec. IV.C.8), Stipulation 77 has been deleted from the discussion. Stipulations 50a and c do apply because restrictions on traffic primarily to benefit caribou anywhere in the planning area also would reduce disturbance to birds.

1752-100
The text in Section IV.C.9.a has been revised in response to this comment.

1752-101
Recent information on the number and home ranges of grizzly bears in the oil fields (Shideler and Hechtel, 1995) is discussed in Section III.B.5.a.(4), Grizzly Bears. This ongoing study has not come up with any conclusion on impacts to the grizzly bear population in regard to oil development on the North Slope.

1752-102
No change has been made in the text. According to the NPR-A Symposium Proceedings held in April 1997, this statement is attributed to Mr. Balogh who was a presenter at the symposium. If the information in the proceedings is not correct, we suggest that the FWS contact the symposium coordinator, Dr. Thomas Newbury, with MMS to have a correction made.

1752-103
The statement speculating that eiders may respond to noise from drilling by relocating before nesting, abandoning the nest, or relocating the brood once incubation was completed has been deleted from the text in Section IV.C.10.b.(2).

Some of the suggested revisions pertaining to refuse and predators appeared to be contradictory. Because no reference was provided, the revisions incorporated into the text in Section IV.C were made to be consistent with the FWS March 17, 1998, Biological Opinion.

1752-104
Two sentences in Section IV.C.10.b(2) have been revised to better clarify the text.

1752-105
The text in Section IV.C.13 has been changed to include changing subsistence-use areas of Nuiqsut residents as an already occurring effect from Prudhoe Bay development and changes in access to Prudhoe Bay from a winter ice road to the village. The BLM acknowledges that it would be useful to compare the mapping of Nuiqsut subsistence-use areas done by Pedersen in the 1970s with maps recently created by the North Slope Borough to see what changes have occurred, but these maps have not yet been released by the North Slope Borough Planning Department. One map that does indicate recent subsistence-use locations appears on p. III-C-32 in the draft EIS. This map is based on one that appeared in *North Slope Borough Subsistence Harvest Documentation Project: Data for Nuiqsut, Alaska, For the Period July 1,1994 to June 30, 1995* (Brower and Opie, 1997). The problem with comparing this map to the 1979 Pedersen data is that the recent map is for one harvest season and Pedersen's maps represent lifetime use areas. The more useful comparison would be to compare Pedersen's data to a newer map that represented the present boundaries of overall subsistence use.

Although the winter ice road from Nuiqsut to Prudhoe Bay has increased access to Deadhorse and beyond, there is no supporting data to indicate that it has served to increase Native employment at Prudhoe.

1752-106
The text in Section IV.C.13.c(3) has been changed to reflect this comment.

1752-107
The Subsistence section conclusions for Multiple Sales for Alternative C, D, and E have been changed to reflect this comment.

1752-108
The most comprehensive discussion of effects is contained in Alternatives A and B. It was not intended to repeat this discussion for each of the alternatives. The text in Section IV.F.8.b has been revised to provide additional detail and clarification.

Regarding interlake areas that could allow facilities placement some distance from molting goose concentration areas, there was no implication that this would eliminate disturbing ground stimuli from all areas used by geese or by support aircraft. Regarding the distance of several kilometers that the latter provokes response in molting geese noted by the commenter, this presumably references helicopter results in Teshekpuk Lake studies rather than ground-based disturbance—the principal projected use of helicopters in this instance would be in case of emergency.

Regarding the use of Troy and Carpenter's observations of renesting by displaced shorebirds and longspurs, these were cited to suggest that other species would react similarly if displaced by facilities construction, not that geese displaced from favored molting lakes necessarily would react in the same manner. However, it is difficult to believe that geese displaced by disturbance from a facilities site would not use other lakes.

No statement was made in this section concluding that stipulations would remove most potential for disturbance or desertion. The stipulations represent a compromise between protecting wildlife from adverse impacts and allowing exploration for oil and gas resources. If the latter is undertaken, there probably is no way to eliminate all disturbance of molting geese in all circumstances.

1752-109
The text in Section IV.F.8.b has been revised to clarify potential effects under Alternative E compared to Alternative B.

1752-110
Discussions with the pilot who conducts the molting-goose surveys confirmed that the portion of Smith Bay that is surveyed is not its southeastern coast adjacent to the planning area. The coastal area of Smith Bay that is important for geese is the Ikpikpuk River Delta and on to the northwest, all of which is outside the planning area. There should be no buffer stipulation along the Smith Bay shore in Figure 6 in Appendix E,

also, there should not be any blue shading anywhere in Smith Bay in Figures 3 or 6, because that shading is meant to denote surveyed lakes within the planning area. These changes to the figures have been made.

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1779

City and Borough of Sitka

Providing for Today...Preparing for Tomorrow
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(907) 747-1812 ✦ Fax: (907) 747-7403

March 9, 1998

NPR-A Planning Team
Bureau of Land Management
222 West 7th Avenue #13
Anchorage, Alaska 99513-7599

Dear NPR-A Planning Team Members:

The City and Borough of Sitka strongly supports the position that all National Petroleum Reserve in Alaska (NPRA) acreage should be made available for oil and gas development and for the protection of the Reserve's other resources. It is important that the development of the petroleum resources be allowed to occur as Congress intended in the management of this land.

We support leasing of all Bureau of Land Management lands (Alternative E) as it most consistently reflects the original intent of Congress for development. Sufficient access to all reserve lands will be the major factor in providing jobs for Alaskans and revenue to the state. Site-specific operating guidelines and control measures will most adequately protect the reserve's fish, wildlife and other natural resources.

Alaska land, including its use, is important to all Alaskans. Please consider these comments as you make your decision on the management of a portion of the National Petroleum Reserve land.

Thank you.

Sincerely,

Gary P. Paxton
Administrator

1789

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AMERICAN COPPER & NICKEL COMPANY INC.
4400 Business Park Boulevard, Suite 48
Anchorage, AK 99503-7118

March 11, 1998

NPRA D-IAP/EIS
Attn: Jim Ducker
BLM
222 W. 7th, #13
Anchorage, AK 99513

Dear Sirs:

Thank you for the opportunity to comment on the Draft IAP/EIS for the Northeast NPR-A. I wholeheartedly support the NPR-A leasing of oil and gas. Domestic oil reserves are in short supply, and imports are at record levels.

The format of the IAP/EIS seems odd, with no preferred alternative stated. In line with the request for the public to help formulate the proposed alternative, here are my comments. 001

1) All of the NPR-A should me made available for oil and gas leasing, not just the proposed Northeast fraction.
2) All of the NPR-A should be opened to mineral entry (ie. Federal mining claims).
3) The NPR-A should include no further areas designated as special areas, national parks, preserves, wild and scenic rivers, refuges, paleontological preserves, etc. To include further designations would be illegal under ANILCA.
4) Mitigating measures for NPR-A, beyond those in existing oil and gas leasing regulations, are unnecessary, and should not be adopted.
5) Please let this study be the final one for the area. The bureaucratic modus operandi of perpetual studies is wasteful in all regards.

Thanks again for the opportunity to comment.

Sincerely,

David C. Oliver

1789-001
These comments were considered in formulating the Preferred Alternative. For discussions of why the IAP/EIS has not considered making all of NPR-A available for oil and gas leasing, opening the area to mineral entry, or establishing parks, preserves, or refuges, see Sec. II.G. The Preferred Alternative would not determine any of the rivers in the planning area suitable for addition to the WSR System. We believe that it is our responsibility under the NPRPA to offer protections for surface resources. Finally, NEPA requires studies such as this.

1799

Janeen Herr

NPR-A Planning Team
Bureau of Land Management, Alaska State Office
222 West 7th Avenue
Anchorage, Alaska 99513-7599

Dear Planning Team Members and Mr. Gene Terland:

This is in response to your call for comments on the Draft Integrated Activity Plan and Environmental Impact Statement (DEIS) for the northeast section of the National Petroleum Reserve-Alaska (NPR-A) prepared by the U.S. Department of the Interior (INTERIOR) Bureau of Land Management (BLM). This plan was released for public review December 10, 1997. I appreciate the opportunity to provide you with my concerns and recommendations regarding management of this reason.

Personally, I do not see how new oil leasing in the NPR-A will benefit my family, my community, or my nation at this time. First of all, there is no guarantee that any of the oil extracted from the Reserve would remain in America to be utilized by Americans. How is opening up the Reserve at this time without this assurance going to benefit our nation?

Secondly, there is simply no justification for a huge expansion of oil development into one of our last strategic petroleum reserves, especially when that reserve provides critical habitat to enormous amounts of wildlife. There is more than enough oil to meet our nation's energy needs for many years to come outside of the NPR-A. Estimates place the world's known reserves at more than a trillion barrels of oil. The forecasts for oil extraction from Prudhoe Bay and the neighboring oil fields continue to rise. Since 1985, forecasts for the period between now and the year 2010 have more than quadrupled. Even the oil companies themselves now admit that new technologies and discoveries at other North Slope fields will keep the Trans-Alaska Pipeline flowing until at least 2040.This of course, is all speculation. The possibilities that more oil will be found and developed in the next decade beyond what the oil companies speculate is what I expect. Official oil company projections have consistently underestimated future production at Prudhoe Bay and other existing fields. Given the absence of a compelling national energy need to justify this EIS process, I can only speculate that there are political motivations at work here. If this is the case, I suggest you change course. The American people want the resources they own managed for their own benefit, not for the benefit of multinational corporations or politicians.

Another concern to me is the lack of accountability to the clean up and management of the 100 plus existing wells already in the NPR-A. It is true that many are used periodically for seismic testing and perhaps other scientific studies, however, there is no plan mentioned in the Draft (DEIS) concerning the clean up of the sites that have been abandoned. Before any new sites are explored the BLM must be accountable to clean up and stabilize the sites that already exist. My suggestion would be to begin with the reserve pit and drill pad eroding into Teshekpuk Lake. 001

Please consider the Paleantological values that the reserve holds for future findings. Most of Alaska's significant fossil finds have been discovered within the oil fields of the Arctic. Who is to assume that the Reserve is not rich in archeological as well as paleontological value? We must as a state, and a nation, must develop a comprehensive strategy to explore and preserve these priceless possibilities. No new leasing should be awarded until this policy is put into place. 002

Last, and most importantly to me, is the indisputable amounts of wildlife found in the the five alternatives offers any permanent protection for the wildlife sensitive areas previously set aside as "Special Areas". No plan should be recommended until permanent protection is granted for the Teshekpuk Lake and Colville River Special Areas. The oil and gas leasing activity asked for by the oil companies will include miles of infrastructure. I realize that with advances in technology there could be diminished impacts on the land and wildlife resources. I do not believe that anyone knows for certain the amount of disruption and permanent damage that could be possible to the countless migratory molting waterfowl, the 25,000 animal caribou herd calving ground, and the raptors along the Colville River corridor. Wildlife issues are always intertwined with subsistence rights issues and this Reserve is no exception. Encroachment of industrial activity to wildlife will invariably cause problems for the wildlife, problems that already affect migratory species due to diminished worldwide habitat available to them. Without a doubt if hardships are placed on the wildlife, then too so it will be for the people subsisting on them for the area.

What about Intrinsic Value? At this time in the history of the United States of America we have only 4% of our entire land mass designated as "Wilderness", and the disturbing fact to add, is that HALF of that percentage, a mere 2%, is here in Alaska! How can we afford to sell out to the oil industry two of the nonrenewable resources available to the citizens of world .. namely oil and wilderness.

Finally, May I suggest some alternatives to consider before making your final decisions that will be irreparable:

1. That the Colville River and the Teshekpuk Lake Special Areas be permanently protected and that no industrial activity ever be permitted in these areas
2. That the oil companies pledge not to export any oil from the NPR-A to foreign countries
3. That there is a comprehensive national energy policy that reduces our dependence on fossil fuels for the future
4. That no leasing is allowed until such a time when our nation has a compelling energy need.

In conclusion, I urge you to adopt the " no leasing " alternative from your Draft EIS at this time. Thank you for the opportunity to testify and I hope you find this letter helpful.

Sincerely,

Janeen Herr

1799-001
Please see Response 1669-025. Also note that prior to initiating cleanup at any site, BLM will pursue the potential responsible parties and require them to conduct whatever actions may be appropriate.

The USGS (and possibly the U.S. Navy) is responsible for all operations associated with the East Teshekpuk Lake well site including the reserve pit. The USGS is responsible for the site until the East Teshekpuk Lake well site is officially "closed" by the ADEC and the BLM accepts it back. The BLM is committed to working with the USGS to develop a plan and conduct a monitoring study to secure an approved closure of the site.

1799-002
This is discussed in Section III.A.1.e and III.C.2 of this document.

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Alaska Resource Advisory Council
Bureau of Land Management

1839

Bruce Babbitt
Secretary of the Interior
1849 C Street, N.W.
Washington, D.C. 20240

March 9, 1998

RE: Alaska Resource Advisory Council Resolution on NPR-A Planning Area

Dear Mr. Secretary,

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The Alaska Resource Advisory Council (RAC) for the Bureau of Land Management (BLM) met recently to discuss the Draft *Integrated Activity Plan/Environmental Impact Statement* (IAP/EIS) for the Northeast National Petroleum Reserve - Alaska (NPR-A). Because of the tight timeframe and the complexity of the matter, the Alaska RAC chose to focus its attention on matters relating to the Colville River.

The Alaska RAC is in the process of taking an in-depth look at the entire Colville River. Because a portion of the Colville is contained within the planning area, we felt it important that we take this opportunity to comment on the IAP/EIS. At our March 4th meeting, the Alaska RAC unanimously approved the following resolution:

RESOLUTION

- The Alaska Resource Advisory Council opposes Wild and/or Scenic designation for that portion of the Colville River downstream of the point that BLM fails to own both banks of the river.

- The RAC recommends that the Bureau of Land Managment (BLM) work with the State of Alaska, Arctic Slope Regional Corporation, North Slope Borough and residents, and other affected interests, to develop a Comprehensive Colville River Management Plan (to consider the entire watershed) to guide future land uses.

- The RAC recommends that BLM adopt a preferred alternative in the Final Environmental Impact Statement for the Northeast NPR-A which ensures "maximum protection" for the scenic, subsistence, recreational, fish and wildlife, and historic values in the Colville River Special Area (prior to adoption of the river management plan).

We thank you for your consideration of our resolution.

Respectfully,

Brad Meiklejohn
RAC Chairman

1850

March 10, 1998

Mr. Gene Terland, NPR-A Planning Team
Bureau of Land Management
Alaska State Office
222 W. 7th Avenue, #13
Anchorage, Alaska 99513-7599

Dear Mr. Terland:

I am writing in regards to the draft Environmental Impact Statement for the National Petroleum Reserve (NPR-A). First, because the Reserve was established to provide oil only at a time of pressing national need, I must say that I am outraged that its development is even being considered during a time when we are exporting oil to Asia. Clearly, our nation does not have a pressing need for additional oil at this time.

Second, I am disheartened that this exceptional wilderness area is now being targeted by industry. My concerns are based on personal observations made during a three-week trip along the Colville River, nine years of attention to ornithological research results from the area, and graduate studies and professional work in raptor biology and ornithology.

In 1989, I worked as a volunteer for the US Fish & Wildlife Service during a raptor censusing and productivity study on the Colville River. After spending several years observing raptors in the Snake River Birds of Prey Area in Idaho, it quickly became clear that the Colville rivaled the Snake in terms of sheer numbers and diversity of nesting raptors and other birds. More importantly, the Colville supports a tremendous population of the once-endangered peregrine falcon. No doubt the Colville's relatively undisturbed status has played a key role in the peregrine's recovery.

In 1978 the people of Idaho and the Bureau of Land Management recognized the importance of preserving the Snake River Birds of Prey Area (SRBOPA) for raptors, and I hope Alaska will do the same with the Colville River corridor. The Department of Interior has already designated the Colville as a "special area", so let's treat it as special. Due to its natural state, beauty, and remarkable wildlife populations, the Colville River corridor is an outstanding resource for ecotourists, bird watchers, and hosters. Development along the corridor will alter the esthetics of the river, the density of wildlife, and the overall ecological value of the area to the "non-corporate" community.

I am in favor of Alternative A (no leasing) for the NPR-A; however, should development proceed, I urge you to consider the following suggestions regarding the EIS:

- No oil leasing should be allowed within the Colville Raptor, Passerine and Moose Land Use Emphasis Areas, as proposed in Alternative B. This is very important to prevent disturbance to wildlife, as well as to protect the extraordinary scenic, esthetic and ecological values within this corridor. 001
- The Colville Raptor, Passerine and Moose LUEA should be expanded to three miles wide, and the no-leasing prohibition should apply to the *entire* expanded area. This is warranted given the importance of river corridors to recreational users, the ecosystem and wildlife. As BLM learned with the SRBOPA, it is insufficient to protect only the "bedroom" of nesting raptors; it is crucial to protect their "dining room" as well. Sadly, the EIS does *not* adequately address how oil development activities will potentially impact wildlife, including raptors. In fact, there is absolutely no literature review relevant to the proposed activities and little, if any, science appears to have been incorporated into the design of the LUEA's and buffer zones. 002
- Boundaries of the Colville River Special Area should be permanently modified to include the Kogosukruk and Kikiakrorak rivers. 003
- A long-term management prescription for the entire Colville River Special Area (which is much larger and wider than the Colville LUEA) should be developed before any leasing is allowed within the Special Area. 004
- Designation of the Colville River as a Bird Conservation Area under Partners in Flight is a noble idea, but other mandated protections are required given the uncertainty of designation and limitations of protections under this program. Designation as wild, scenic or recreation river is a nice but unrealistic idea, given Alaska's congressional delegation and the private ownership of the right bank of the river by a Native Corporation.
- All three Special Areas (Utukok Uplands, Colville River and Teshepuk Lake) warrant consideration as National Wildlife Refuges and adequate consideration of such designation should take place before any oil leasing is permitted in the Special Areas.

Thank you for considering these comments.

Sincerely,

Nancy DeWitt

1850-001
This comment was factored into decisions regarding the Colville River and its tributaries in the Colville River Raptor, Passerine and Moose Habitat LUEA. The Preferred Alternative allows leasing in the area, but prohibits nearly all surface occupancy associated with oil and gas development within 1 mi of the bluffs or banks of this area. It also includes a special consultative provision for an area 2 mi around these bluffs, a provision to recommend that the Secretary of the Interior expand the Colville River Special Area to encompass areas approximately 4 mi wide along tributaries significant for raptor habitat, and a provision to develop a Colville River Management Plan to address multiple surface resource concerns, including protection of raptor habitat. Finally, the Preferred Alternative recommends working with other landowners to create a Bird Conservation Area.

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We believe the prohibition of nearly all oil and gas development (the exceptions are pipeline crossings of the Colville and pipeline and road crossings of its tributaries) within a mi of the bluffs where the raptors nest provide adequate protection for these birds. The 1-mi setback was the standard protection provided by the FWS as a result of consultation mandated by Section 7 of the Endangered Species Act, when the arctic peregrine falcon was on the threatened and endangered species list, and twice the distance urged by that agency since that species was delisted. In addition, studies cited in the revised impact analysis statement in this final IAP/EIS indicate the setback in the Preferred Alternative is sufficient to protect nesting sites (see Sec. IV.C.8.b.(1)(b)).

The commenter is correct that successful raptor reproduction requires both adequate nesting and foraging habitats. However, given the scenarios for future actions in the NPR-A, including petroleum development, it is not likely that habitat will be altered enough in any single foraging range to jeopardize successful raptor reproduction. Note that a study of a single peregrine pair nesting on the Sagavanirktok River on Alaska's North Slope determined that the hunting range was >120 mi^2 and the greatest straight line distance from the eyrie to where a stoop on prey was made was >9 mi. (White, and Nelson, 1991).

1850-002
The Preferred Alternative recommends adding portions of the Kikiakrorak River, the Kogosukruk River, and tributaries of the Kogosukruk important for raptor habitat to the Colville River Special Area.

1850-003
The Preferred Alternative calls for a Colville River Management Plan for the Special Area.

1850-004
Please see Response 1851-058.

The Wilderness Society • Natural Resources Defense Council
National Wildlife Federation • World Wildlife Fund
Alaska Center for the Environment • Northern Alaska Environmental Center
U.S. Public Interest Research Group • Defenders of Wildlife • Sierra Club
Alaska Wilderness League • Alaska Conservation Alliance
Alaska Forum for Environmental Responsibility • Greenpeace
Grassroots Environmental Effectiveness Network (GREEN)
EarthJustice Environmental Defense Fund • Trustees for Alaska

1851

March 12, 1998

NPR-A Planning Team
Bureau of Land Management, Alaska State Office
222 West 7th Avenue
Anchorage, AK 99513-7599

RE: Northeast National Petroleum Reserve-Alaska
Draft Integrated Activity Plan/ Environmental Impact Statement

Dear Planning Team Members:

This is in response to your call for comments on the Draft Integrated Activity Plan and Environmental Impact Statement (DEIS) for the northeast section of the National Petroleum Reserve-Alaska (NPRA) prepared by the U.S. Department of the Interior (Interior) Bureau of Land Management (BLM), and released for public review December 10, 1997. We appreciate the opportunity to provide you with our concerns and recommendations regarding management of this region.

Our organizations seek effective protection for the nationally and internationally recognized wildlife habitats, wild rivers, and wilderness found in the NPR-A planning area. Upon review of the above-referenced DEIS and consideration of the actions of state and federal agencies regarding oil development in the NPR-A that have occurred in recent months, we have found significant failings in the planning process for the northeastern NPR-A currently underway, and are concerned that these failings place the extraordinary surface resources of the Reserve at risk. Among our concerns are:

- Interior has failed to demonstrate that leasing for oil and gas development in the northeastern NPR-A at this time is necessary and consistent with the purposes for which the Reserve was established, i.e., that leasing now is "consistent with the total energy needs of the nation."(Conference Committee Report No. 94-708 [Senate], 3/23/74.) Without a national energy policy, there is no framework within which to evaluate the total energy needs of the nation. This, coupled with the current condition of the West Coast oil market and the present expectations for export of North Slope crude oil to foreign markets, leads us to conclude that it is not appropriate to allow oil and gas exploration and development in the NPR-A at this time; 001

- The DEIS has many significant deficiencies, including the lack of a thorough and complete evaluation of direct, indirect and cumulative impacts, as well as the nearly complete absence of any consideration of likely and predictable impacts outside the region. While BLM has acknowledged the proposed actions for the northeastern NPR-A are of a level of significance to warrant a full NEPA review, the agency has failed to address the NEPA requirements for such an analysis in this document. The inadequacies of the DEIS are so great as to make it impossible to make a reasoned judgment about the efficacy of opening the northeastern NPR-A to oil and gas development at this time; 001

- None of the management alternatives presented in the DEIS provide adequate and appropriate protection for the unique fish, wildlife, plant and wilderness resources of the northeastern NPR-A. Through the means of an artificial and improper constraint, apparently internally generated within Interior, no consideration was given to permanent protection for these resources (other than Wild and Scenic River designation for a portion of the Colville River Special Area) and none of the alternatives prohibit placement of oil and gas development related support facilities and transportation infrastructure anywhere in the northeastern NPR-A. The Secretary not only has the authority to present recommendations to Congress for wilderness and refuge designations within the NPRA, but under the authorities of the National Petroleum Reserves Production Act, the Alaska National Interest Lands Conservation Act, the Federal Land Policy and Management Act, and The Wilderness Act, the Secretary can take administrative action to permanently protect these areas;

- The stipulations for mitigating impacts from oil and gas development in the NPR-A are harmfully insufficient to protect surface resources. The promulgation of the stipulations was based on the premise that the stipulations must not "adversely affect the viability of potentially commercial [oil] discoveries", thereby creating a blanket provision for modification and waiver that renders the stipulations virtually meaningless; and

- If Interior intends to consider trading lands within the NPR-A, either now or in the future, it should address this issue before this planning process goes forward. We do not believe a land trade within the NPR-A is in the nation's best interests or in keeping with the purposes for which the Reserve was established. Nonetheless, a discussion of land trades has begun. Interior must address this issue before the planning process can proceed. 001

Upon careful consideration of the issues we've outlined above, we have concluded it is not appropriate to open the northeastern NPR-A to oil development at this time. At the very least, before development could proceed, a supplemental EIS outlining BLM's preferred Alternative for management of the northeastern NPR-A needs to be

completed, and an opportunity for public comment on the selected management alternative must be provided.

At such time when the need for the oil reserves of the NPR-A is adequately defined and justified, and development in the Reserve is deemed appropriate, we believe a management alternative should be selected that provides adequate protection to surface resources of the NPR-A. At a minimum, such a "conservation alternative" should ensure that development in no way impacts the designated Special Areas within the Reserve by prohibiting leasing, or the placement of roads, pipelines and other support infrastructure within the boundaries of these areas. In addition, Interior should provide to Congress recommendations for wilderness or refuge status for these areas, and in the interim, manage them as wild areas.

I. THE DEPARTMENT OF THE INTERIOR HAS FAILED TO DEMONSTRATE THAT LEASING AT THIS TIME FOR OIL AND GAS DEVELOPMENT IN THE NPR-A IS PROPERLY CONSISTENT WITH THE PURPOSES FOR WHICH THE RESERVE WAS ESTABLISHED.

002 There is no apparent need to develop the energy resources of the NPR-A at this time. Pursuant to the Naval Petroleum Reserves Production Act of 1976 (NPRPA), the oil reserves of the NPR-A are to be managed in "...a manner consistent with the total energy needs of the Nation..." (P.L. 94-258). The DEIS fails to document how a decision to proceed with an oil and gas leasing program in the NPR-A at this time is consistent with this purpose.

National energy need is not addressed in the DEIS. Without a national energy policy, there is no context within which to evaluate how developing the NPR-A at this time, rather than in the future, relates to meeting the nation's "total energy needs." No threshold criteria for that important and pertinent decision are offered. Certainly, the current oil market condition and price of oil does not support developing NPR-A oil or gas resources at this time. Not only is the price of Alaska North Slope (ANS) crude at a multi-year low, but it has failed to ever reach the levels upon which previous studies have projected potential reserves.

003 Furthermore, long-term price projections by Cambridge Energy Research Associates provided to the State of Alaska in February 1998 indicate a long-term trend in low oil prices. For example, by 2001, CERA projects prices of Alaska oil at $19 to $19.50 per barrel, not adjusted for inflation, and says that prices could continue downward into the longer term. (T. Bradner, February 16, 1998. "Oil markets: Expect low prices to continue, experts say," Alaska Oil and Gas Reporter/Alaska Journal of Business and Commerce, p. 4, 10.) However, the DEIS evaluates what it calls the current oil price ($18.00 per barrel) and the extremely unlikely price of $30 per barrel, with no documentation that the $30 price is at all likely. This use of an overly optimistic price assumption greatly overestimates the potential oil contribution for national energy needs. In fact, at the current oil price of Alaska crude oil at $12.25 per barrel (Oil & Gas Journal

Online, Industry Statistics, February 25, 1998), BLM's current projections find that NO economically recoverable oil would be found (see DEIS p. III-A-28, "Note that at prices below $15/bbl, no economic resources are present, even at high-risks.") 003

004 Another characteristic of the market to which NPR-A oil would flow is that it has a viable export component. Since 1996, when the requirement that all ANS crude must be marketed in the United States was removed, exports to Pacific Rim nations have risen to a current range of 26,000 to 135,000 barrels per day (bpd.) Alaska's Department of Revenue has predicted that the rate of export will remain steady at an average of 70,000-80,000 bpd for the next three years, (Alaska Department of Revenue "Fall 1997 Revenue Sources Book: Forecasts and Historical Data.") The Asian market represents an outlet for sale of ANS crude when the supply to U.S. West Coast markets exceeds demand. This outlet is important as it keeps price stable by providing a market source for excess ANS crude that might otherwise depress the West Coast price.

The importance of the Asian market was noted by British Petroleum's CEO John Browne, who stated in a recent speech before the Alaska Industry Support Alliance that lifting the ANS export ban was "one victory for Alaskans and for BP that has fundamentally changed the way the world views the competitiveness of Alaska investments." In recent years, new ANS production forecasts have consistently increased. At any time that ANS production exceeds West Coast demand, it is reasonable to conclude that a portion of production from NPR-A (and perhaps all of it) will be shipped to Asian markets. Export of NPR-A oil production does not serve the nation's energy needs. Lacking a requirement that all NPR-A oil and gas reserves must be marketed in the United States, a decision to allow oil and gas development in the northeastern NPR-A at this time is inconsistent with the purposes for which the Reserve was established.

005 Further, the DEIS states that analysis of oil and gas resources in the northeastern NPR-A is not yet complete. According to the discussion found at p. I-8: "Concurrent with the NEPA analysis, BLM, in cooperation with MMS, is analyzing geologic data, including massive amounts of seismic data…." If such additional work is needed at this time to analyze geological data for identifying oil and gas lease tracts, why has a DEIS that is strongly oriented toward early and extensive leasing activities been released now? In our opinion, the public is being asked by BLM to "buy a pig in a poke", i.e., to contribute to a decision-making process regarding the disposition of public resources without having adequate information that allows them to judge what they're giving up, or what they're getting for whatever is given up.

II. THE DEIS IS DEFICIENT.

A. Incomplete and insufficient description of the affected environment. 006

The DEIS fails to provide a full and adequate description of the resources and ecological conditions found in this nationally and internationally recognized area.

Resources and populations levels are presented from recent literature, with many gaps and with population projections based on questionable statistical extrapolation rather than field data and known sampling protocols. 006

The full range of species and their respective population magnitudes and ranges as well as their role in the interactions within the ecosystem are severely deficient in the description of the environment resulting in severe underestimates of the likely impacts from specific intrusions, activities, accidents, and other expected events. The sensitivity of the active zone, the mantle within which the majority of life in the Arctic exists, is described in generalities only. The seasonal interactions between elements of the living mantle and the basic physical components of the ecosystem and the relationship to the annual and long term success of the species is essentially absent. Reference to specific studies of the effects of disruption and damage to this active zone are inadequate as well, as are the references to failed attempts by the industry to recover sites damaged by their activities.

As an example of this inadequacy, the DEIS provides no maps showing fish resources for the entire planning area. Maps showing the known locations of fish spawning, rearing and over-wintering habitats by anadromous, freshwater, and marine species should be provided. These maps should indicate which lakes, rivers, streams, and lagoons and nearshore Beaufort Sea habitats have been surveyed for fish and which have not, and show the dates when studied. This mapped information would provide the data necessary to determine whether baseline fisheries information is adequate for assessing potential impacts of oil and gas exploration and development in the area. The baseline data on fish resources is essential for determining the potential effects on fish habitat from water withdrawal (including potential lack of water available for industrial operations), gravel mining, pollution, and other impacts. 007

By insisting on a far too-abbreviated time schedule for this environmental impact statement, Interior has been forced to forego needed field work which would have enabled better descriptions of the affected environment, would have provided some ability to make reasonal population estimates and some ability to fill gaps within under-sampled habitat areas, and some ability to improve the discussion of the likely impacts from the activities in the various alternatives. The lack of two or more seasons of field work designed specifically to accomplish such improvements has confined the descriptions and products of those who wrote the document to a shallow paper exercise that fails to meet the requirements under the National Environmental Policy Act.

The failure to describe in appropriate and accurate detail the diversity and unique nature of the surface resources of the northeastern NPR-A exacerbates the frustration of a reader of the DEIS in attempting to discern the likely extent of damage, displacement, diversion or other undesirable modification of the surface resources in the region by application of the alternatives. The weaknesses and gaps are extensive; the following discussions are themselves limited and are intended only to highlight the deficiencies rather than attempt to provide Interior with information that was missed, is incomplete or

was improperly used. Interior would be well advised to simply set this document aside and begin anew in a legitimate effort to meet the requirements of reason and law. 007

1. Teshekpuk Lake Special Area.

Our interest in the northeastern NPR-A is especially focused on two unique areas, Teshekpuk Lake and the Colville River, which were designated as Special Areas in 1976 when authority for management of the NPR-A was transferred to the Department of the Interior. We believe BLM has failed to describe and quantify adequately the resources and values found in these unique areas in the DEIS, and has failed to evaluate whether the boundaries previously established to delineate them are adequate to assure needed protection of these resources and related ecological conditions from the impacts that can reasonably be expected in implementing any of the range of alternatives for development proposed in the DEIS. 008

The Teshekpuk Lake Special Area provides essential molting habitat for significant populations of Pacific brant, greater white-fronted geese and Canada geese. (King, 1997) These populations are not only important in the subsistence traditions of Alaska native people, but they form important components of other subsistence needs as well as sport hunting traditions in Canada and other states in the U.S. In addition, the Teshekpuk Lake watershed provides nesting habitat for many other waterfowl species including northern pintails, oldsquaws, king eiders, Pacific brant, greater white-fronted geese, Canada geese, tundra swans, and three species of loons—Pacific, red-throated, and the rare yellow-billed. Spectacled eiders, listed as a threatened species, have relatively high nesting densities in this area. Steller's eiders, another threatened species, has been recorded as a nesting species within the area but little is known about the significance of that use.

The significance of the Teshekpuk Lake wetlands complex to Pacific brant is unique and is its best known wildlife feature. Each year, nearly 22% of the world's Pacific brant population molts in the Teshekpuk Lake area (Bollinger and Derksen 1996, King and Hodges 1979.) There is no other area with the combination of low-lying lakes, lush vegetation and freedom from disturbance available to this brant population along Alaska's northern coast (Weller et. al. 1994.) Intensive studies of brant habitat use, energetics and effects from disturbance conducted by the U.S. Fish and Wildlife Service and university biologists during the late 1980's have documented the sensitive nature of these wetlands and their importance to the entire Pacific brant population (Bollinger and Derksen 1996, Jenson 1990, Miller 1994, Taylor 1993, Weller et. al. 1994.)

The Teshekpuk Lake Special Area also encompasses the major calving grounds for the Teshekpuk caribou herd comprised of an estimated 25,000 animals and an important food resource for local Native families. And the lake itself is an important natural resource. Teshekpuk, meaning "the largest lake of all" in Inupiat, is the largest freshwater lake on Alaska's coastal plain and was found eligible as a Natural Landmark (Detterman 1974). It provides important fish habitat to Arctic coast species(Philn and

Moulton 1993). The lake surface is only 5 feet above sea level and is io delicate freeze-thaw balance with the surrounding terrain (Viereck and Zasada 1972, Detterman 1974.) Although the DEIS states that Teshekpuk Lake has the highest fish species diversity in the planning area, (DEIS, p.III-B-6) it does not fully describe the uniqueness of this lake. 009

The Teshekpuk Lake Special Area contains numerous other wildlife, fish, plant, cultural, historic, physiographic and other resources that would be placed at severe risk under all of the alternatives described in the DEIS. The values of these features and their synergistic interactions if left undiminished by actions of man and machines are absent in the document. The likely degrading impacts that can reasonably be expected from each of the alternatives are not described adequately nor completely. The essential elements necessary for a reasoned decision are simply not available in the document. These deficiencies can be overcome by taking the time to do additional field studies, a better and more thorough literature review and a better integration of facts with expectations. We urge Interior to take the time to do it right.

2. The Colville River Special Area.

The resources and ecological values found in the Colville River Special Area are similarly understated in the DEIS. The Colville is the largest of Alaska's rivers that flow to the Arctic Ocean. The Colville River was designated a Wild and Scenic River study river in the Alaska National Interest Lands Conservation Act (ANILCA; sec. 604.) It was proposed as an ecological reserve (Viereck and Zasada 1972, Underwood 1977, Underwood and Juday 1979), and segments have been recommended for natural landmarks (Detterman 1974.) The river and its tributaries provide important habitat for moose, brown bears, wolves, wolverines, and at least twenty species of anadromous and freshwater fish. It is a vital source of subsistence resources for area residents, and is a spectacularly scenic area with substantial recreation values and potential for remote, wilderness experiences. The Colville River is perhaps best known for its remarkable concentrations of songbirds and birds of prey, including Arctic peregrine falcons, gyrfalcons and rough-legged hawks. The intact habitat of the Colville River played a key role in the recovery of the Arctic peregrine falcon, which was removed from the list of North American endangered species in 1996.

3. Values of other important natural areas understated.

In addition to Teshekpuk Lake and the Colville River, the northeastern NPR-A contains several other areas that are still being studied, each of which may exhibit similar values sufficient to warrant such special protection. These include the general Fish Creek area, the Ikpikpuk River, the Kikiakrorak River and the Kogosukruk River. The DEIS fails to examine adequately the potential special values of any of these areas. Proceeding with oil and gas exploration and development in these areas without a better understanding of the value of each of these areas is premature and would fail to meet the BLM's obligations under NEPA, ANILCA and the NPRPA. 010

B. Impact analysis is inadequate.

1. Assumptions regarding oil field development in the NPR-A are incomplete and unsupported. 011

The evaluation of potential impacts from oil development activities in the northeastern NPR-A is based upon a series of proposed development scenarios that are incomplete and unrealistic when evaluated in the context of existing development in the region. As a result, the nature and extent of potential impacts are significantly understated.

The DEIS fails to describe thoroughly or in detail, the alternative potential transportation infrastructure associated with the various levels of development to be allowed in the northeastern NPR-A. The DEIS description is based upon an assumption that no major road networks will be built (although such road construction is not prohibited by the stipulations). The limited restrictions that are included (stipulations 24 and 28, DEIS, p. II-30) can be modified or waived without public notice. The specification in the DEIS that there would be only a single, short road connecting two drill sites within each oil field and no roads between oil fields is unrealistic viewed in the light of existing operating oil field infrastructure. While existing oil fields (including Kuparuk, Milne Point and Endicott) may have initially been described and even constructed as distinctly separate fields, over time the industry has argued successfully for connecting roads to the main Prudhoe field and Trans-Alaska pipeline terminus.

There is no existing evidence that fields within the NPR-A would not be connected to each other and to existing development to the east. Past experience has consistently shown that these connecting roads have been necessary for safety (including pipeline spill response), and for economic considerations related to costs of hauling gravel for construction and maintenance and transportation of workers and supplies. It is unrealistic to assume connecting roads will not be built, and by making this assumption, BLM has dramatically understated the effects of the infrastructure that would be associated with oil field development in the northeast NPR-A.

The impacts of a network of connecting access roads, as well as the extraction of gravel needed to construct these roads must be fully described and discussed. In addition, there is inadequate discussion of potential development of a road system to facilitate pipeline maintenance. And if there are to be no roads constructed for surveillance and maintenance, that would mean oil spill surveillance and response or pipeline repairs would be done using aircraft, which studies indicate would be extremely disturbing to molting geese.

The DEIS does not provide an adequate analysis of water needs for oil development in the northeastern NPR-A, including a discussion of sources of water and the effects of draw-down on these sources. This is an especially critical omission, given that the assumptions regarding oil field development rely on this use of ice roads. In

addition, the need for water for use in a water-flood process for enhanced recovery of oil is virtually ignored, including potential sources of water, location of water intake and treatment facilities, and pipeline infrastructure. The DEIS fails to address fully and in detail the impacts of allowing all of this activity within the Teshekpuk Lake Special Area, or at any location in the northeastern NPR-A.

011

The DEIS fails to articulate in a clear manner with necessary details how proposed development in the northeastern NPR-A will be linked to, in fact may facilitate development, outside the area currently proposed for leasing. It is important to analyze, particularly for the reasonably foreseeable future, direct and cumulative impacts from roads, staging areas, causeways, processing plants, and pipelines that would result from developments to the north and west. The DEIS states that development proposed in the range of alternatives presented, "...largely is analyzed in its relation to existing and producing fields; this analysis does not speculate on development from myriad potential off- and onshore fields. The timing, location, development, resource levels, and infrastructure requirements of yet undeveloped (if not undiscovered) fields are a matter of extreme conjecture." (DEIS, p.IV-A-38.) In determining potential impacts of proposed development in the NPR-A and how that development will facilitate and/or connect to other development in the region, it is reasonable to include at least all known oil fields, unitized areas, and areas with pending permits for development and construction. The DEIS has notably failed to do so.

012

The DEIS does not address transportation infrastructure, specifically pipelines, servicing fields outside the northeast NPR-A which may cross the planning area, claiming that individual components of such an infrastructure "would require separate legal authorization and environmental analysis, " (DEIS, p. II-39-40.) This is not an adequate reason for failing to address these components, particularly when development within the planning area may facilitate development outside the area (and subsequent pipelines and roads crossing the area) by providing some needed infrastructure for such development. There are existing private, state and federal leases (onshore and offshore) near the planning area, and it is more likely these will be considered for development if lands within the planning area are leased and explored.

As an example, an onshore pipeline landfall at Pitt Point, with a pipeline traversing the Teshekpuk Lake Special Area, was included as one of the possible development cases in the Final EIS for OCS Sale 144, (Beaufort Sea Planning Area Oil and Gas Lease Sale 144 FEIS, Fig. IV.A.1-1. MMS, 1996.) An onshore pipeline from offshore fields would likely connect with pipelines from oil fields in the planning area. The potential impacts from pipelines crossing the northeast NPR-A from fields outside the planning area should be evaluated in the DEIS, particularly since most of the offshore area north of the planning area is adjacent to the Teshekpuk Lake Special Area. Existing OCS Sale 144 leases are located offshore of Drew Point at the northwest corner of the planning area. The entire coastline of the planning area is on the schedule for a state area-wide offshore sale in 1999 and a federal OCS sale in 2000.

013

The total pipeline network resulting from oil fields connected to the main sales pipelines should be portrayed in the hypothetical development scenarios contained in the DEIS. This portrayal should include the 10 oil fields described in Alternative E. The map of Future Pipeline Corridors (DEIS, Figure IV-Ab-7) should portray the connections with existing Kuparuk field pipelines. It should also show the connections to the 1-10 potential oil fields that may be found in the planning area. Lack of such graphical information withholds vital context from the reader as well as the decision-maker, preventing the exercise of personal judgment free from slanted influence by the agency.

014

2. The analysis of impacts on the DEIS is inadequate and lacks a scientific foundation.

The analysis employed in the DEIS is flawed in a number of respects, including the following:

- No objective criteria is offered for determining the specific impact of proposed activities on fish, birds, endangered species, terrestrial mammals or marine mammals discussed;
- No adequate site-specific impact analysis is offered in any of the fish or wildlife categories. Instead, the DEIS typically offers only generic statements of impact, which incorrectly assume that impacts will be identical throughout the planning area; and
- No adequate differential analysis of impact assessment is offered, despite the fact that each alternative incrementally increases the level of activity and area available for oil and gas exploration and development. Instead, the DEIS merely conducts an analysis under Alternative B. Impacts under subsequent alternatives are defined only in vague terms in relation to Alternative B. For example, with respect to the impact on birds under Alternative C, the DEIS concludes that "[e]ffects of oil and gas activity are not expected to be significantly different than discussed for Alternative B." (DEIS, p. IV-D-9). Similarly, under Alternative D the DEIS concludes that additional acreage leased "are expected to result in effects on bird populations that are somewhat increased from those discussed for Alternative B." (DEIS, p. IV-E-9). This flawed form of analysis is found throughout Alternatives C, D and E.

As a result of the lack of objective impact assessment criteria, the DEIS fails to adequately define the extent, intensity, and duration of effects on vegetation, fish and wildlife habitats and populations, subsistence and other resources. Scientific justification for the criteria, as well as citations for impact levels, needs to be provided.

We are disturbed that the analysis of potential effects in all alternatives obscures the degree of impacts expected by use of the phrase, "impacts/recovery may not be detectable above natural fluctuations of the population and survey methods/data

available.* Although there are wide natural fluctuations for many arctic bird or other wildlife populations, some survey methods cannot detect small to moderate changes in abundance, and there may not be adequate baseline surveys against which to measure effects, this phrase is generally used to avoid making conclusions about impact levels. The rationale also is used to offset information about negative effects that has been included, or to imply that there would be no impacts. The DEIS ignores the possibility of obtaining new information through targeted studies or monitoring programs prior to leasing. 014

In some cases, the DEIS fails to consider existing information regarding impacts. For instance, the DEIS fails to present existing scientific data on decreased breeding and densities of birds, including lesser golden-plover, semipalmated sandpiper, pectoral sandpiper, dunlin, stilt sandpiper, buff-breasted sandpiper, and red phalarope, along the road system in the Prudhoe Bay oil fields, (Troy, 1993.) Semipalmated sandpiper nesting density declines of 40% have been documented. 015

3. The DEIS fails to address fully the direct impacts of exploration and development in the northeastern NPR-A.

The complete range of activities associated with oil exploration and field development was not considered in the analysis of direct impacts contained in the DEIS. As a result, the full scope of direct impacts was underestimated.

The DEIS fails to describe thoroughly the estimated level of seismic activities in the northeastern NPR-A and evaluate the impacts of these expected activities. For example, under Alternative A, the DEIS assumes, "…one 2-D seismic operation will occur in alternate winter seasons in the planning area… [and] …no 3-D seismic is anticipated, because no leasing or development will occur…," (DEIS, p.IV-A-29.) However, this winter, a 3-D seismic survey is proposed to occur in NPR-A, as well as an extensive 2-D seismic survey which extends far west of the planning area (Recent G&G Permit Activity, MMS Alaska OCS Region, MMS Alaska Region web site, 1998.) Research on impacts (e.g. disturbance to tundra vegetation and permafrost, over-wintering fish and wildlife) from 3-D seismic surveys on the North Slope has never been conducted. 016 017

As a starting point for evaluating direct and cumulative effects of seismic surveys, BLM should compile a map showing year-by-year the geographic array of all past seismic lines and the total miles of seismic lines carried out for each survey. This should be compared with previous estimates. If it exists, information from past monitoring reports should be compiled on the number and size of fuel spills, water consumption rates and any violations of stipulations, including trespass, disturbance or damage to cultural sites, archeological sites and Native allotments. 018

The DEIS fails to address air and water quality impacts adequately. Rather, it defers discussion on these impacts by stating that: "The USEPA issues NPDES permits 019

required by the CWA. In order to provide information for these permits, any future NEPA document would describe existing water quality and the quantity of water requirements for the proposed project; expected pollutants and their concentrations; and the quality and locations of wastewater treatment facilities and discharges... The USEPA also issues Prevention of Significant Deterioration (PSD) air-quality permits required by the CCA, while the ADEC issues other air-quality permits. A future NEPA document would provide an analysis of meteorological factors and air-quality baseline conditions and predict impacts to air quality during construction and operations...," (DEIS, p.II-38.) The DEIS provides no data on expected mobile or permanent sources or concentrations of air or water pollutants from NPRA development, even though this information is essential for evaluating potential degradation of local and regional habitats. Throughout development across the North Slope, air and water quality permitting, and analysis of impacts, has been done in a piecemeal basis and has not been well integrated with other permitting analyses. 019

Deferring a substantive discussion of air and water quality impacts in this manner represents an unacceptable segmentation of the NEPA analysis. Failure to provide information on these impacts in turn impinges on the ability of BLM and the public to make a reasoned judgment about a final course of action for management of the northeastern NPR-A.

The DEIS fails to describe and analyze thoroughly the impacts from gravel extraction for construction of oil fields. This is perhaps one of the most serious shortcomming of the DEIS with regard to estimating impacts of development. The amounts of gravel needed for proposed development are grossly underestimated and as a result the impacts assessment is unrealistic and totally inadequate. The DEIS assumes each oil field constructed within the northeastern NPR-A will need only 100 acres of gravel placement. (This amount is based in great part on the assumption referenced above that there will be no road infrastructure connecting these fields.) This is of great concern because historically, gravel requirements have consistently and greatly surpassed initial assumptions. For example, gravel quantities used at Prudhoe Bay exceeded predictions of need by nearly 400% and areas of gravel fill and extraction were 60% greater than predicted, (U. S. Fish & Wildlife Service 1987.) For the Trans-Alaska Pipeline, gravel mine sites were double the acreage predicted. (Pamplin 1979, U.S. Fish & Wildlife Service 1987.) 020

We are particularly concerned about the potential demand for gravel from the Colville River floodplain and the Beaufort Sea coast, as there are few identified gravel sources within NPR-A, and there would be direct, indirect, and cumulative effects on critical riparian bird habitats from oil and gas activities taking place outside the NPR-A boundaries. NPRA leasing along the Colville River corridor, as proposed in alternatives B-E, will greatly increase the likelihood of oil and gas related activities, including drilling, gravel mining, water withdrawal, and air and ground disturbance in the important fish, migratory bird and mammal habitats in the river floodplain itself.

We are also concerned about the degree to which existing information regarding the potential impacts of oil development to Pacific black brant has been ignored, particularly since impacts to brant in the NPR-A may exacerbate the effects of disturbance and development this species is experiencing throughout its range in the United States, Canada and Mexico. During the 1950's and 1960's, human harassment and disturbance from boaters and others were related to the displacement of wintering populations of brant from bays in California, Oregon, and Washington (Denson and Murrell 1962, Einarsen 1965, Chattin 1970, Smith and Jensen 1970, Henry 1980 cited by Ward and Stehn 1989.) At present, the major fall staging area at Izembek National Wildlife Refuge along Alaska's coast is threatened by a proposed road through critical feeding habitats in a designated wilderness area. 021

Studies have documented the susceptibility of these brant to disturbance from over-flights by helicopters and fixed-wing aircraft, as well as from other oil industry activities (including the mere presence of man at times) and have demonstrated that the brant do not habituate to these activities. For example, studies documenting significant behavioral effects to brant from helicopter over-flights (Derksen et al., 1992) found that molting brant did not habituate to repeated aircraft disturbances (Jensen 1990.) A scientific model developed for this area found that up to 25% of the flightless, molting population of brant could experience weight-loss which in turn could affect their migration success (Miller 1994.) 022

In addition to the effects of disturbance and oil pollution, major modifications of wetlands hydrology through road building, water use, gravel mining at the lake shores, or flooding are likely to induce major morphological changes in the lake systems important to migratory waterfowl (Weller and Derksen 1979.) Other studies have documented that brant are sensitive to fixed-wing aircraft, as well as helicopters, and disturbances from human activities on the ground, (Ward and Stehn 1989.) 023

In the event that oil fields are developed without connecting roads, there will be greatly increased levels of aircraft access needed compared with existing North Slope oil fields, a fact that was not adequately analyzed in the DEIS. The DEIS also fails to discuss differences in the potential energetic consequences of disturbance to Pacific brant, which undergoes a lengthy molt migration to reach the Teshekpuk Lake area compared to brant that nest on the North Slope, which do not undergo such a stressful migration to molt. There are also geomorphological and other habitat differences which could limit the applicability of studies of brant conducted at the existing Prudhoe Bay oil fields with the Teshekpuk Lake goose molting area.

In addition to the effects of disturbance, oil pollution, or major modifications of wetlands hydrology through road building, water use, or other activities, are also likely to impact waterfowl that rely on the lake systems in the northeastern NPR-A (Weller and Derksen 1979.) Although there have been some technological advances in oil field development, there is no scientific evidence to indicate that the fundamental risks from

habitat fragmentation, degradation of feeding habitat quality, and ground and air disturbance could be acceptably diminished. 023

The impacts to birds and other wildlife from habitat loss, disturbance, and degradation in the Colville River corridor, and along the Kokosuktuk and Kikiakrorak river valleys are greatly underestimated. In fact, the DEIS does not analyze in depth the potential effects from a variety of oil development activities on raptors and other birds. It does not specifically discuss the vulnerability of nesting raptors, nor contain any scientific documentation on the effects of ground and aircraft disturbance to raptors. 024

4. The DEIS fails to address in adequate detail and specificity indirect and cumulative impacts of oil development in the northeast NPR-A.

The DEIS inadequately considers cumulative impacts from oil and gas development in the northeastern NPR-A and adjacent land and water areas. BLM is obligated under NEPA to consider cumulative impacts that may occur throughout the NPR-A and cannot arbitrarily exclude these. There are a few scattered mentions in the DEIS of possible effects elsewhere in the NPR-A from leasing in the northeast corner, but this analysis is not rigorous or consistent. Cumulative effects are defined under CEQ regulations as: "…the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless if that agency (federal or non-federal) or person undertakes such other action," (40 CFR Sec. 1508.7.) 025

For proposed development in the NPR-A, the cumulative effects analysis should, at a minimum, address the degree to which development in the NPR-A will exacerbate impacts associated with existing oil field operations.

The existing oil fields on Alaska's North Slope cover nearly 400 square miles of state lands between the Canning River to the east and the Colville River to the west. The cumulative effects of expanding oil development across the Alaskan Arctic have not been comprehensively addressed to date. In fact, most of this oil field development has proceeded on a piece meal basis without even the completion of an Environmental Impact Statement. Indeed, only three EIS's have been completed for oil field development on Alaska's North Slope: the Trans-Alaska Pipeline System; the West Dock causeway; and the Endicott oil field. None of these focused on onshore oil field development. Among the cumulative effects that have never been adequately addressed are region-wide impacts to water and air quality, changes in hydrological regimes within the region and subsequent degradation of fish and wildlife habitat, loss of habitat, loss of wilderness values, impacts to subsistence resources and loss of subsistence hunting and fishing opportunities.

It is acknowledged in the DEIS that, "a lack of a comprehensive environmental analysis and land use plan for the entire North Slope…was highlighted by many people

as a critical issue, citing the cumulative effects of past, present and future land use activities, particularly onshore and offshore petroleum development, on various resources and their uses," (DEIS, p. 1-9). Yet the DEIS fails to address these cumulative impacts adequately and explain how proposed oil development in the NPR-A will expand upon or otherwise contribute to these impacts. 025

The discussion of existing developments in the DEIS is inadequate to describe its full scope. For example, the DEIS refers to 141 miles of existing pipelines, those in the major "trunk line systems," (DEIS, p.III-C-56) and ignores the nearly 1,100 miles of pipelines that thread through and between existing oil fields. The DEIS describes 161 miles of "interconnected" roads in the Prudhoe Bay field and "approximately 6 miles of other interconnected roads within Kuparuk River Unit,"(DEIS, P.III-C-54) and fails to address more than half the actual miles of roads in existing development by not including roads ending in drill pads and roads built into pipeline pads, or roads for other North Slope fields. 026

There are actually some 430 miles of roads linking oil fields and facilities on the North Slope, not including the road system associated with the Trans-Alaska Pipeline System, ("Comparison of Actual and Predicted Impacts of the Trans-Alaska Pipeline System and Prudhoe Bay Oilfields on the North Slope of Alaska." U.S. Fish and Wildlife Service, 1987.) The DEIS doesn't address this road system in its entirety or describe how development in the NPR-A will connect to and expand this transportation infrastructure. 027

In 1987, an impact assessment of existing oil field development on the North Slope was done using a time series of aerial photographs to measure direct and secondary effects, (Walker et. al. 1987.) This represents the most rigorous attempt to evaluate cumulative effects conducted to date. We recommend this work be updated as an initial step in completing an adequate cumulative effects analysis for the northeastern NPR-A. Results should include a set of detailed maps at 1:24,000 scale showing all facilities, as well as secondary or ancillary sites, facilities, and known events such as impoundments, dust shadowing, culvert failures and oil spill sites. This kind of trend analysis would show rates of gravel fill and extraction, rates of construction of roads and pipelines, number of drill pads and production pads, and distance between roads, pipelines, and other facilities within each oil field and between oil fields. 028

We are disappointed that the issue of global warming and climate change was not addressed at all in the DEIS, even though this was an issue we raised in our scoping comments. This issue is integral to an assessment of impacts on the Arctic environment and also to determination of national energy need. 029

Scientific evidence which indicates the existing North Slope oil fields are a significant source of greenhouse gas emissions was ignored in the DEIS, and no analysis of the cumulative effects from the emissions produced by NPR-A development was been provided. Measurements taken downwind from 90% of the major oil field production facilities in Prudhoe Bay found concentrations up to 45 ppm above ambient levels

(Brooks, S.B., T.L. Crawford, and W.C. Oechel. 1997. Measurement of Carbon Dioxide emissions plumes from Prudhoe Bay, Alaska oil fields. J. Atmos. Chem 27: 197-207.) Brooks et. al. estimated yearly emissions based on the direct measurements taken during their study to be 11.4 million metric tons per year, and they found that monthly emissions were four times greater than the total carbon emissions reported by the oil producers for the same time period, and six times greater than the combustion emissions assessed by Jaffe et al in J. Atmos. Chem. 20 (1995), 213-227, based on oil facility fuel consumption data collected in 1989. Brooks et al. concludes that there "may exist large carbon dioxide sources at the oil fields that are unrelated to the reported fuel consumption rates." This study also speculates that if de-pressurization of water retrieved with the extracted oil results in discharge of dissolved CO^2, then increasing emissions will be expected as water extraction increases with aging of oil fields. 029

Oil and gas exploration and development in NPR-A would result in new sources of greenhouse gas emissions on the North Slope (from vehicle use, production turbines, gas injection facilities, and other sources) and also during consumption of the resulting petroleum products. The cumulative effects of greenhouse gas emissions from exploration and development in NPR-A in combination with all other reasonably foreseeable onshore and offshore Alaska Arctic oil development projects should be analyzed in the DEIS.

The DEIS fails to consider impacts from development on nonfederal lands within the planning area. BLM states that development on "lands owned by ANCSA regional or village corporations…" and other nonfederal laws within the planning area are not addressed in the DEIS (DEIS, p.I-2.) But the effects of industrial activities they may occur on these lands as a result of opening the northeast NPRA to oil development should not be ignored. Likewise, ongoing activities on these lands that may impact management decisions in NPR-A must be considered. BLM must consider cumulative effects in order to comply with NEPA. It is reasonably foreseeable to expect oil development to occur on these lands, and for this development to be linked to development in NPR-A as well as impact resources in NPR-A. 030

Arctic Slope Regional Corporation has already leased much of its subsurface estate beneath Kuukpik Corporation lands to ARCO Alaska Inc., Anadarko, and Union Texas Petroleum. This winter, ARCO is drilling a delineation well on Native corporation lands within the boundary of the NPR-A, and other wells have already been drilled further to the west. Some of these lands within the NPR-A are within the boundaries of ARCO's proposed Colville River Unit. BLM's future pipeline scenario for NPR-A (DEIS, Fig. IV.A.1.b-7) shows it connecting at the same location as ARCO's proposed Alpine oil development in the Colville River delta. The pipeline would cross state and Native lands within and outside NPR-A. Activities on these lands would therefore be integrally connected with development in the NPR-A, but these potential effects are ignored in the DEIS.

The same is true for the impacts from ASRC's gravel pit just east of the Colville near Nuiqsut (the source of gravel ARCO intends to use for its Alpine development). The DEIS states that "existing borrow sites east of the NPR-A" will be used for developments in the northeastern part of the planning area (DEIS, p.IV-A-14), yet fails to discuss the ASRC mine site. 031

The DEIS fails to address the impacts of activities at the state-owned Umiat airport, claiming these fall outside the scope of review. We disagree. The presence of this existing facility, which cover some 1,450 acres within the boundaries of the NPR-A, will likely influence the siting of other transportation infrastructure, such as roads and pipelines. It could become a major staging site and transportation hub. The nature of the activities the state allows under its current management plans for the Umiat airport will influence the course of proposed development in the northeastern NPR-A and must be considered. 032

There would also be other direct, and cumulative effects to the northeastern NPR-A from offshore development to the north. For example, in its final EIS for OCS Sale 144 off the coast of the NPR-A, MMS presumed that as many as six oil spills averaging 7,000 barrels could occur in the Beaufort, resulting in losses of seabirds, waterfowl, and shorebirds. These effects need to be considered with those that could occur from proposed development within NPR-A in order for the public to have a clear picture of the environmental effects of the actions described in the range of alternative presented in the DEIS. 033

Pipelines crossing the northeast NPR-A would have direct and indirect impacts on fish and wildlife, plants, habitats and subsistence resources and uses which have not been analyzed. The Final EIS for OCS Sale 144 does not provide an adequate evaluation of the impacts of an onshore pipeline servicing the sale area. It contained just two short paragraphs regarding the effects of the pipeline from onshore habitat alteration and disturbance and oil spills which many reviewers have found to be extremely superficial. They dramatically underestimate the risks, contained no scientific citations, and cannot be used as a basis for tiering other analyses or actions. 034

By arbitrarily ignoring the effects of pipelines crossing NPR-A from offshore leases, or others "outside the planning area," BLM fails to evaluate whether the effects from these transportation facilities and access routes, and their supporting infrastructure and industrial activity, could be much greater than from oil field development within the northeast NPR-A. It is highly likely that onshore support facilities, helicopter traffic and causeways would be required to support offshore fields, especially within the sensitive coastal zone. Due to the sensitive nature of the nearshore coastal zone, it may be more likely that there would be onshore processing facilities, with all the supporting structures, facilities, sites and impacts. The combination of facilities for offshore development, including the necessary onshore connecting pipelines, plus onshore oil fields is not analyzed in the DEIS.

One of the most serious cumulative impacts that may be expected elsewhere in NPR-A is from development of a road network which could in turn pose negative environmental impacts from coal and other development that may become economic to transport as a result of the roads. The most significant impacts to be considered are likely to be those to the Western Arctic caribou herd, effects on the coastal environment (especially habitats used by migratory birds, fish, caribou, and marine mammals), those impacts likely to affect spectacled and Steller's eiders, and their habitats, and the impacts on subsistence. 035

5. The DEIS incorporates the Alpine oil field as a model for development, despite the fact that the field and its infrastructure are not yet developed and the likely impacts of this proposed oil field have not been rigorously analyzed.

The assumptions regarding impacts from potential development in the DEIS are modeled on ARCO Alaska's Alpine oil field and multiples thereof. It is important to note that the Alpine oil field, which has not yet been constructed, was permitted with inadequate NEPA review, continuing the pattern of "piece-meal" development noted above. As a result, the direct, indirect and cumulative impacts of this oilfield development have not been fully considered nor made available to the public for review. This is a particularly critical problem given that the site chosen for construction of the Alpine oil field is within the active flood plain of the largest river in the American Arctic. It is the first time in the history of Alaska North Slope oil field development that an oil field will be located entirely within the active flood plain of a large, untamed river.

BLM has chosen to ignore such issues in using Alpine as the model for NPR-A development and in recognizing the Alpine field as an integral part of proposed development in the northeastern NPR-A. Indeed, BLM actually misstates in several places in the DEIS that the Alpine field already exists, e.g., (DEIS, p. IV-A 28.): "Alternative B would not result in a viable field in the $18 per-barrel case because tracts offered for leasing would be too far from existing infrastructure (Alpine)." It is very disturbing to have the analysis of impacts predicated on an oil field with no operational record and for which an inadequate evaluation of impacts of oil field development has been prepared. Such factors call into serious question this DEIS's evaluation of the impacts of oilfield developments. 036

In addition, empirical evidence does not support the assumption that the Alpine oil field infrastructure as currently proposed is a meaningful representation of what is necessary for the full development of this field and connecting satellite fields. Furthermore, BLM has omitted crucial information about this potential development in its descriptions thereby eroding the value for determining potential impacts. A review of the map, "Layout of Alpine Field" (DEIS, Figure IV-A.1.b-1.), and discussions in the accompanying text regarding the total expanse of this proposed field reveal that not all field facilities and related infrastructure were included. There is no mention of the ASRC gravel mine from which all needed gravel will be extracted, nor any mention of the 037

pipeline to the existing Kuparuk Sales line, or the natural gas pipeline to Nuiqsut. There is no mention of potentially connected and related projects that are reasonably foreseeable, such as the Fjord satellite field with its airstrip, pipelines and/or roads connecting to Alpine, and additional production pads within the Alpine field connected to the main processing plant.

It is also expected that within ARCO's proposed 80,000-acre Colville River Unit, there will likely be additional development sites. The potential for expansion is exemplified by ARCO's proposal to drill two offshore wells this winter within the proposed unit, as well as another delineation well for the Alpine reservoir on the west side of the Nechelik channel within the exterior boundaries of the NPR-A. 037

Importantly, the DEIS fails to address the many concerns raised by ARCO's proposal to use an untested technology for a pipeline crossing of the Colville River that will connect the Alpine field and proposed transportation infrastructure in the northeastern NPR-A to the Trans-Alaska Pipeline System. Not only does the DEIS fail to address the issues raised by boring a hole beneath the frost bulb of the river and through which a pipeline will be threaded, it leaps beyond all reasoned doubts by assuming that this technology will be used for future Colville River crossings. This is especially disturbing given that it is a technology which has yet to be tested, much less proven and for which impacts are not described or apparently yet known. The DEIS also discusses crossing "relatively wide rivers" by trenching and burying pipelines in the river bed. Again, such technology is untested in the Alaskan Arctic and is currently undergoing its first exposure at British Petroleum's Badami oil field which is currently under construction. Pipeline construction for Badami began this winter, but the river crossings have not been completed. During initial construction for the Badami field, the total amount of tundra and riverine habitat predicted to be impacted in the initial permit application has already been doubled due to "unforeseen requirements" for the river crossings. Needless to say, the long-term effects of these crossings have not yet been measured. The DEIS largely ignores the untried and unproven nature of these features and the resulting impact analysis is speculative at best. 038

The DEIS analysis relies on requirements for buried tundra pipelines in its list of mitigating measures in two crucial caribou movement corridors (stipulation 28, DEIS p. II-30) and in the Teshekpuk Lake Caribou Habitat LUEA (stipulation 37, DEIS p. II-31.) In predicting impacts from development, the DEIS assumes this technology will be used. However, as with the river crossings described above, this pipeline technology has never been used within the North Slope oil fields. (The initial project description for the Badami field development proposed using a chilled, buried pipeline but this technology was later abandoned due to environmental concerns regarding maintaining the integrity of permafrost and pipeline engineering costs. (Pers. comm. M. Weger, Corps of Engineers, March 3, 1998; BP Exploration 1995; U.S. Army Corps of Engineers Public Notice, 2-940700, July 31 1995; U.S. Army Corps of Engineers Public Notice, October 20 1997.)) Inclusion of such untested technology as a mitigation measure in the DEIS without any evidence of its viability or any information regarding its impacts means that BLM has 039

substantially underestimated the likelihood of negative impacts on caribou distribution and movement patterns resulting from barriers to habitat availability, and on caribou reproductive rates. It further implies an underestimation of the potential for leaks and spills that would result in pollution and degradation of habitat. 039

6. The DEIS fails to evaluate the impacts of oil development in the northeastern NPR-A outside the region.

The DEIS fails to include an evaluation of impacts of oil field development outside the region. Specifically, the DEIS fails to include an adequate discussion of how requirements of international treaties for the protection of shared wildlife resources will be met under the range of management alternatives proposed. Oil leasing and development in NPR-A has great potential to affect the public values of migratory bird resources well beyond the North Slope, yet the DEIS fails to describe these effects. 040

The United States is a signatory to treaties for the protection of migratory birds with Canada (1916), Mexico (1936), Russia (1976), and Japan (1979). In addition, the United States is a partner in several international agreements for the protection of shared wildlife resources, including the North American Waterfowl Management Plan, which in turn includes the Arctic Goose Joint Venture Program, the 1996 "Area V" agreement between the U.S. and the Russian Federation for protection of the environment and natural resources that focuses on spectacled and Steller's eiders and Arctic nesting geese, and the Arctic Environmental Protection Strategy signed by the eight Arctic nations. Many NPRA waterfowl populations are managed through the four North American Flyway Councils. These include Pacific brant managed under a 1992 plan developed by the Pacific Flyway Council, greater white-fronted geese managed under a plan developed by the Central and Mississippi Flyway Councils, and Tundra Swans managed under a plan developed by all four flyway councils. The DEIS has completely neglected to address how the obligations of the United States under these treaties and agreements will be met in the range of management alternatives presented, including obligations to consult in advance of actions likely to affect the resources.

In addition, in a notable but disappointing manner, the DEIS fails to consider how the impacts of leasing in the northeastern NPR-A will impact subsistence hunters in western Alaska. We find this astounding, given that nearly 75% of the Pacific brant and a significant portion of the white-fronted geese that depend on the Teshekpuk Lake Special Area for critical molting habitat come from the Yukon-Kuskokwim River Delta. Interior has been engaged in cooperative management efforts with the subsistence hunters of the Yukon-Kuskokwim Delta for over fourteen years, pursuant to the provisions of the Yukon-Kuskokwim Delta Goose Management Plan, including successful efforts to secure passage of a protocol amendment to the Migratory Bird Treaty between the United States and Canada that provides protection for subsistence use of migratory waterfowl. Yet the DEIS makes no mention of the potential impacts of oil development in the northeastern NPR-A on subsistence use of migratory waterfowl in western Alaska. A review of the proceedings of the subsistence workshop that BLM sponsored in August 1997 (Appendix 041

E) reveals that no one from the Yukon Kuskokwim Delta was contacted about this meeting, and the concerns of this constituency were simply not addressed. This is a serious shortcoming that stands in sharp contrast to the statutory intent of NEPA. 041

7. The DEIS fails to adequately address impacts to endangered species in the northeastern NPR-A.

The DEIS would allow oil and gas exploration and development to proceed, while ignoring the obligations imposed on the Department of the Interior under the Endangered Species Act. The Department has not yet fulfilled its obligation under the Endangered Species Act to designate critical habitat for the spectacled eider or Steller's eider. Large portions of the planning area are used by both species and should be considered for designation as critical habitat. The agency cannot determine if its obligations under the ESA to protect critical habitat of listed species are being met until a thorough review of potential critical habitat is completed, including on-site surveys of the region. 042

Moreover, the DEIS analysis of potential impact to these species is seriously flawed. The DEIS concedes that "[the reaction of eiders to disturbance in the oilfields is not well understood." (DEIS, p. IV-C-36). See also DEIS, p. IC-C-37 ("As stated previously, reactions of eiders to aircraft are not well understood."). Nevertheless, and with no support, the DEIS concludes that disturbances "are not expected to cause significant population effects." (DEIS, p. IV-C-39). Given the incomplete information available on potential impacts to these threatened birds from proposed activities, it would be unlawful to proceed at this time without insuring adequate protection by designating critical habitat and determining the impact of proposed activities on that habitat and the species. 043

8. The DEIS fails to adequately address impacts of development to subsistence uses in the northeastern NPR-A.

The DEIS is further deficient in its failure to comply with section 810 of ANILCA, 16 U.S.C. § 3120. Section 810 requires the agency to hold hearings and make findings if the proposed activity "may" significantly restrict subsistence uses. Kunaknana v. Clark, 742 F.2d 1145, 1151 (9th Cir. 1984.) The DEIS provides no discussion, however, of the standard that was applied in determining the effect on subsistence resources in the planning area. Language in the DEIS suggests that BLM concluded the second tier hearing and finding requirements apply only if it could conclude an alternative would significantly restrict subsistence uses. (DEIS, Appendix D.) This standard does not meet the requirements of the Act. The DEIS should have clearly identified the "may" standard required by the statute and addressed whether under any alternative significant restrictions are possible. 044

In addition, the fundamental basis for the conclusions reached under Alternatives B and C is flawed. The level to which subsistence resources will be degraded by oil and gas exploration and development is inextricably linked to the impact these activities will

have on fish and wildlife resources throughout the planning area. As discussed previously, the DEIS fails to adequately assess the impact of oil and gas exploration and development on these resources. An adequate assessment of impact would likely conclude that proposed activities under Alternatives B and C may, in fact, significantly restrict subsistence uses. In addition, given the uncertainty of information available concerning impacts on many wildlife species, BLM cannot justify any conclusion other than that a significant restriction may occur under Alternatives B and C, as well as Alternatives D and E. 044

Once an initial determination is made that subsistence uses may be restricted, Section 810 requires that the Secretary give notice, hold hearings and make certain findings before the proposed activity can proceed. Specifically, the Secretary must determine that such a restriction is "necessary and consistent with sound management principles for the utilization of public lands." He must further determine that the proposed activity will involve the minimal amount of land necessary and that reasonable steps have been taken to minimize the effects on subsistence uses. The DEIS offers no discussion whatsoever on how the land utilized under any of the alternatives could be considered "minimal." Indeed, the DEIS fails to specify the size, frequency and timing of sales, making such a showing all but impossible. The DEIS does not contain sufficient justification for a conclusion that reasonable mitigation measures would be taken to minimize the effects on subsistence uses. Finally, as previously discussed, the DEIS has completely failed to demonstrate that this particular leasing program is necessary at this time. 045

9. Additional shortcomings of the impacts analyses in the DEIS.

Additional concerns regarding the adequacy of the DEIS in dealing with analyses of direct, indirect and cumulative impacts include the following:

- The evaluation of impacts from major oil spills, chronic spills and spills to marine waters contained in the DEIS does not adequately describe and evaluate direct effects and totally lacks a discussion of indirect effects. 046
- None of the maps of existing oil field facilities show the boundary of the Arctic National Wildlife Refuge, nor the delineation of Badami, North Star and Liberty fields. 047
- The DEIS does not disclose how the detailed "pool" analysis, alleged to have been done using the PRESTO program, was completed since the document vigorously asserts that seismic data analysis has not yet been completed. 048
- For the "multiple sales" scenario described for Alternative E, the DEIS claims that, "displacement of birds from disturbance and habitat alteration or loss is expected to increase throughout [much of] the planning area ... but not significantly affect 049

planning area populations," (DEIS, p. II-52.) The DEIS offers no evidence to substantiate the claim, and logic would seem to deny its accuracy. At the least, the basis for this claim should be cited. 049

- The DEIS asserts that as a result of the levels of development allowed in Alternatives D and E, "…near the oil fields, surface, air and foot traffic are expected to increase significantly [over that which would occur under Alternatives A-C] and to displace some terrestrial mammals, but not significantly affect Arctic Slope populations." While this statement may categorically be true (assuming the Western Arctic herd is counted as part of "Arctic Slope populations"), it fails to recognize the severity of impacts to the Teshekpuk Lake herd, a locally important subsistence resource. This unusual (for this DEIS) analysis at the landscape level appears to be a clear misuse of statistics. The analysis should display and discuss site specific impact as well as the broader area impacts. 050

- The DEIS asserts that if multiple sales are offered under all alternatives, "…with extended intervals between sales, impacted bird populations are expected to recover from noise and disturbance effects in 1 year." The DEIS fails to offer verification for this statement. In addition, it fails to provide justification for its conclusions that only under Alternative E will "…Nuiqsut's pursuit of caribou [be] more difficult for at least an entire harvest season," and, "overall cumulative effects to subsistence harvests are expected to cause one or more important subsistence resources to become unavailable, undesirable for use, or experience population reductions for a period of 1 to 5 years in Nuiqsut."(DEIS, p.II-65.) 051

C. Other deficiencies of the DEIS.

1. There is no leasing program described.

Despite the fact that the DEIS is consistently referred to as a "programmatic" EIS, it contains no description of an oil and gas leasing program for the northeast NPR-A. The DEIS fails to specify essential components of a leasing program, such as timing, frequency and size of sales. BLM simply dismisses its obligation under NEPA to provide a clear picture of proposed development by saying, " the number of potential sales, the interval between sales, and the period with [sic] which the sale may be held are unknown," (DEIS, p.IV-A-1.) Other aspects of a leasing program are also missing, including the size of lease tracts, length of lease terms and unitization requirements. Given the lengthy history of oil and gas exploration and development on the North Slope, BLM had readily available information from which to develop probable scenarios that were drawn from the reality of the past 30 years. The reader is left without essential information and therefore unable to evaluate and draw conclusions in a meaningful way. One of the basic purposes of NEPA is thereby withheld from the public and the decision-makers. 052

For example, without a description of a leasing program, it is unclear at this time whether lands deemed "unavailable for leasing" in the final EIS will be deleted from subsequent leasing programs. Once a preferred alternative is developed, there is no safeguard that such a decision will have lasting effect. Shortly after the first lease sale (or even earlier), a request could be made by industry, Alaska's governor or a new Administration that areas "unavailable" for leasing in the first sale be made "available" for leasing without a new planning process and EIS. In other words, it is unclear to what extent BLM intends to "tier" future sales or development activities in the northeastern NPR-A to this EIS and what opportunities for public involvement will be provided for future management decisions. The section of the DEIS on "Process" should be amended to include a provision that specifies a new EIS would be needed if areas deemed "unavailable for leasing," "deleted," "delayed," or "deferred" in the Record of Decision for this planning process are later proposed to be offered for leasing. It should also be made clear that consideration of any lease sales in the NPR-A outside this planning area will also require an EIS, as will any oil field development inside the planning area. 053

2. There is no preferred alternative designated.

The DEIS is unusual in that BLM fails to select a proposed action or designate a preferred alternative. In fact, BLM makes it clear that new alternatives may be developed after closure of the public comment period which combine parts of one or more of the alternatives presented in the DEIS (DEIS, p. II-19) or a mix of elements from all alternatives (DEIS, p. I-8). Such an action would foreclose meaningful public involvement and comment on the agency's selected course of action. The final alternative may be very different from any in the DEIS and, thereby, require substantial revisions of the impact analyses and descriptions. We believe a Supplemental EIS that describes BLM's proposed action and preferred alternative is needed, with opportunity for public review and comment on the Supplemental EIS provided, before a final EIS and Record of Decision is issued. 054

Public statements from Interior officials and information in the DEIS suggests that the oil and gas leasing in the northeast NPR-A is a foregone conclusion. All alternatives except Alternative A propose leasing. Even Alternative A allows for seismic and other exploratory work to be done throughout the northeast NPR-A, and does not prohibit the construction of roads, pipelines and other oil development support infrastructure. Given the references in the DEIS to a lease sale already planned for the area and "tentatively scheduled for late 1998" (DEIS, pp.IV-A-6, IV-A-24) coupled with public statements made by the Secretary of the Interior regarding the decision to allow leasing, it seems disingenuous for BLM to claim that a leasing alternative is not the proposed action. It seems by many indications to be the de facto proposed action and properly should be designated as such in the DEIS, so the public has an opportunity to respond to the agency's stated rather than implied intentions.

3. The DEIS fails to include a proper "no action" alternative.

Alternative A is not a "No Action" alternative and should not be characterized as such. BLM is correct in stating that the EIS completed in 1983 for the last leasing program in the NPR-A is inadequate for a new program (DEIS, p.I-8). However, the 1983 EIS and Record of Decision specified leasing deletions and established Special Management Zones. The final Integrated Activity Plan (IAP) adopted as a result of this environmental analysis will establish guidelines for future management of the planning area and will supersede management guidelines developed under the 1983 EIS, (DEIS, p.I-8.) Therefore, if Alternative A were selected, the prior leasing deletions and Special Management Zones would be eliminated.

We believe the leasing deletions and Special Management Zones contained in the 1983 EIS were woefully inadequate for protecting the wildlife, habitat, and other resources of the region. However, eliminating even those flawed protections by action of this EIS process would leave only those protection stipulations "...that apply to all alternatives" (DEIS, p.II-19). The 1983 management designations included leasing deletions. Nothing in Alternative A prohibits leasing in the future. Alternative A fails to provide adequate protection for the designated Special Areas in light of post-1983 information, rather it improperly deletes protections provided in 1983. This is clearly not a "No Action" alternative. 055

III. NONE OF THE MANAGEMENT ALTERNATIVES IN THE DEIS PROVIDE APPROPRIATE PROTECTION TO SURFACE RESOURCES.

The "maximum protection" of surface resources that is required by the NPRPA is not achieved by the alternatives presented in the DEIS. None of the alternatives propose adequate protection for the resources and values of the Teshekpuk Lake or Colville River Special Areas. None of the alternatives prohibits the construction of roads, pipelines, gravel mines and numerous other activities and facilities within these designated Special Areas. Alternative C includes inadequate buffers for critical habitats within the designated Special Areas. Alternative D provides inadequate protection for caribou, and contains no buffers for goose molting areas. Mitigation measures proposed under alternative D for caribou and waterfowl can all be waived. 056

The use of the term, "Land Use Emphasis Areas (LUEAs)", is confusing and misleading. It specifies in the DEIS that, "While LUEAs provide much of the structure of the presentation of the alternatives, they are not in themselves administrative or legislative designations, and they carry with them no new regulatory authority. They are simply tools that BLM is using to identify geographic areas where it is considering management emphases to meet its responsibilities under existing authorities..." (DEIS, p.II-1) Despite this statement, the LUEA designation is used to delineate the areas not leased in various alternatives, implying that some level of regulatory protection may be afforded these areas. But none is specified in the DEIS. We suggest that to "meet its responsibilities under existing authorities...", the BLM should recommend the Secretary of the Interior add these LUEA values to the Special Area descriptions, and codify the requirements in regulations that will provide effective protection of these areas. 057

Alternative B proposes that all LUEAs, except lands contained in the Kuukpik Corporation Entitlement, would be closed to oil and gas leasing. These LUEAs include the Teshekpuk Lake Special Area, but not all of the Colville River Special Area. Alternative B explicitly assumes that a wide variety of industrial activities would be allowed in the Special Areas and LUEAs. Under Alternative B, pipelines crossing all lands would be allowed in all areas (except the potential Colville Wild and Scenic River LUEA), even in the most critical feeding areas used by molting geese. A wide variety of industrial activities ranging from water withdrawal, seismic surveys and temporary facilities such as staging facilities would be allowed in all areas closed to leasing in Alternatives B-D. Furthermore, Alternatives B and C do not prohibit construction of roads through the Special Areas and LUEAs , except for a limited buffer area around goose-molting lakes, (stipulation 25., DEIS p. II-30), which may be waived by the BLM.

Alternatives B and C do not prohibit many types of permanent facilities in the Teshekpuk Lake Special Area, including roads, seawater treatment plants, docks or causeways, staging areas, production pads, airports, camps, and gravel mines (except for restrictions in limited buffer areas around goose molting lakes, which may be waived by BLM). The need for these kinds of facilities could result from production in areas made available for leasing in NPR-A or from offshore production in state and federal waters. Construction and operation of these facilities could cause loss or degradation of caribou calving and insect relief habitat; nesting areas used by ducks, geese, swans, loons, spectacled eiders and Steller's eiders; and fish habitats.

A. The DEIS gives inadequate consideration to permanent protection for important habitats.

We believe that BLM erred in not analyzing important alternatives and issues that conservation groups raised in scoping comments, including consideration of permanent protection for unique natural areas and critical wildlife habitats in the northeast NPR-A, (DEIS, pp. I-2, II-39.) Certain reasonable alternatives and elements within alternatives were excluded by the agency because it used an arbitrary criterion of whether federal legislation would be required. The Council on Environmental Quality has published guidelines for federal agencies undertaking NEPA reviews which state, "an alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable," (CEQ, 1981, 48 Fed. Reg. 10827.) 058

While we are pleased that BLM analyzed Wild and Scenic River status as one component of permanent protection, we are disappointed that the agency did not fully address the public's concerns regarding permanent protection for unique natural areas within the northeastern NPR-A, and we believe the agency has an obligation to do so. A permanent protection alternative should include a review of both national wildlife refuge status and designation of qualifying areas as wilderness. To place such a review in proper context, a discussion should be included in Administrative History section regarding Congressional initiatives designed to incorporate the entire NPR-A or substantial areas of

the NPR-A into the National Wildlife Refuge System. These legislative proposals were generated as part of Congressional efforts to promulgate the Alaska National Interest Lands Conservation Act and they underscore the importance placed on the wildlife and wilderness values of the NPR-A.

1. The DEIS lacks consideration of wilderness designation for any portion of the NPR-A.

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We strongly disagree with the rationale given in the DEIS for excluding consideration of wilderness designation (DEIS, p.III-C-52). Although the Sec. 1001 ANILCA study did not include NPR-A, it did not prohibit wilderness studies and recommendations in these units. Although the Secretary may not be required to study BLM lands in Alaska for possible inclusion in the Wilderness Preservation System, there is no prohibition to doing so. ANILCA Sec.1320 provides the discretion for the Secretary to do so, "In carrying out his duties under section 201 and section 202 of such act [FLPMA] and other applicable laws, the Secretary may identify areas in Alaska which he determines are suitable for wilderness and may, from time to time, make recommendations to the Congress for inclusion of any such areas in the National Wilderness Preservation System."

We believe it is inappropriate that a boldover policy from Interior Secretary James Watt is offered by BLM as one rationale for not considering alternatives involving recommendations for wilderness designation in the NPR-A. The DEIS states, "BLM is under Secretarial direction to not do further wilderness reviews and/or studies within the State of Alaska except in those areas where study is mandated by legislation," (DEIS, p. III-C-52). We presume that Secretarial Directive to be the one issued in 1981 by Secretary Watt (Instruction Memorandum No. AK81-167, From: State Director, Alaska, To: District Managers, Staff and Division Chiefs, April 29, 1981.) We are dismayed that BLM has chosen to retain in force a secretarial directive establishing a policy for which there was never any formal rulemaking, or opportunity for public review or comment. The 1981 directive should be officially replaced by actions to study qualifying NPR-A lands, and make wilderness designations a component of the conservation alternative considered in the DEIS.

2. Wild and Scenic River for Colville does not include all of Special Area

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BLM has found the Colville River eligible for inclusion in the Wild and Scenic River System (DEIS, p. II-3), a finding we strongly support. BLM states that the Colville (along with the Nigu-Ilivlik and Utukok Rivers) was nominated for inclusion in the Wild and Scenic River System in 1980. The DEIS recommends the Colville for Wild River designation "...because of its importance to peregrine falcons and source for paleontological data," (DEIS, p. II-3). This recommendation should also include a listing of the river's other remarkable values, particularly its spectacular scenic qualities, its importance to other raptors (gyrfalcons and rough-legged hawks), importance to other

fish and wildlife (such as moose and passerine birds), and other values that were recognized in the 1980 studies.

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We agree with BLM that interim protection should be provided for the Colville while a recommendation for Wild River is under consideration. "If the Colville River is determined to be suitable in the Record of Decision, the Wild and Scenic River Act requires that the river corridor receive special protection. It will be managed, on an interim basis, in a way that is consistent with its tentative classification..." (DEIS, p.II-3) It is unclear, however, exactly what area will be excluded from leasing and development activities if Wild River designation is recommended. The DEIS describes the LUEA for the Colville as a 2-mile strip on the west side of the river from the southern planning boundary to just south of Nuiqsut (DEIS, p.II-3), and in Alternative B, it states there would be no leasing in this LUEA (DEIS, p. II-19). Elsewhere in the DEIS, it states, "new mining claims and mineral leases would be prohibited within ½ mile of the river," (DEIS, p. IV-C-18; Appendix G-1). While we strongly support the recommendation of Wild River designation for the Colville, a narrow, quarter-mile strip of land will not afford sufficient protection to the resources and values needing a shield. A greater buffer zone, such as is provided by the boundaries of the 1977 Colville River Special Area is needed.

Alternative B states there will be no surface occupancy for industrial development within 1 mile of the Colville, Kogosukruk, or Kikiakrorak Rivers because a "portion of the Colville River Raptor, Passerine, and Moose LUEA would be proposed as a Bird Conservation Area," (DEIS, p. IV-C-18). Since designation of a Bird Conservation Area would require a negotiated agreement for cooperative management, it should be portrayed as a proposal, not as a mitigation measure.

B. No alternative prohibits placement of surface infrastructure (roads pipelines, etc.) In any area of NPR-A, including within designated Special Areas.

The range of options is biased toward oil and gas leasing and development, with no alternative offered that prohibits construction of oil development support facilities and transportation infrastructure in any portion of the northeast NPR-A, even in critically important wildlife habitats, e.g., Teshekpuk Lake and Colville River Special Areas.

IV. LEASE STIPULATIONS DESIGNED TO MITIGATE IMPACTS ARE INADEQUATE

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The DEIS states that, "Restrictions on development (lease stipulations) will not adversely affect the viability of potentially commercial discoveries," (DEIS, p. IV-A-26.) Basing the promulgation of all lease stipulations on this premise creates a blanket provision for modification or waiver that makes the stipulations meaningless. The list of instances in which all the stipulations can be modified or waived (DEIS, p.11-27) are so

broad and vague that we are left wondering if there will be any circumstance under which the stipulations will actually be implemented. 060

For example, key environmental protection stipulations in alternative D for the Teshekpuk Lake caribou habitat LUEA and in alternative E for the Teshekpuk Lake caribou habitat and goose molting habitat LUEAs can be modified or waived "if the lessee can demonstrate that the restrictions would make production technically infeasible or economically prohibitive, and can demonstrate that the goals of the stipulation can be accomplished through alternative means." (DEIS, p. II-27.) It is our view that the ambiguities of this loophole fall short of the "maximum protection" standard set for the Special Areas in the NPRPA.

The situation is exacerbated by the fact that the DEIS contains no scientific evidence that the stipulations will be adequate in mitigating impacts to an acceptable level. To our knowledge, no systematic review of the effectiveness of individual stipulations has been completed, but stipulations similar to those in the DEIS have failed to prevent significant habitat loss and degradation elsewhere across the North Slope. 061

In addition, the DEIS fails to describe clearly the conditions that may erode the effectiveness of specific stipulations. For example, there is an aircraft flight elevation stipulation for wintering caribou range, during certain summer periods for the Teshekpuk Lake Caribou Habitat LUEA and within two miles of peregrine falcon nests (stipulations 56 and 57, DEIS, p. II-33). The stipulations may sound good on paper; however, the weather typically precludes flying at the specified elevations due to fog, rain, or other conditions. Thus waivers would routinely have to be granted if flying was to occur at all. The DEIS includes no information on the daily average presence of conditions which constrain flight options.

Although there is a long list of stipulations for areas to be leased, only seven of the 82 will be included as conditions of proposed lease sales. The remainder are to be applied at the permitting stage, including stipulations for management of production wastes, water use and site reclamation. (This is in sharp contrast to BLM's last leasing program in the NPR-A, wherein most of the stipulations were applied at the lease sale stage. (1983 Final EIS and ROD.)) Experience has shown that by the time a project gets to the permitting stage, the pressure to reduce the number and nature of stipulations is greatly increased. 062

For example, with the Endicott project, British Petroleum fought strongly against permit requirements to build breaches in the causeway leading to the project that would have allowed an adequate flow of water to maintain natural temperature and nutrient regimes in the nearshore ecosystem. BP claimed that because the field was so marginally profitable, the additional costs of the breaches would kill the project. It turned out that the project costs ultimately proved to be $1.1 billion less than BP originally budgeted while the estimated cost of the breaches was $66 million.

It is far more prudent to include the stipulations as lease sale conditions so that bidders are aware at the onset what the operating criteria will be for development. This gives greater predictability to industry and greater mitigation potential to managing agencies while providing a better level of environmental protection. 062

In some cases, stipulations that appear to provide reasonable mitigation of impacts from development activities will not apply to all industrial activities posing risks. The DEIS does not explain why certain activities are excluded. For example, a prohibition on activities within one mile of polar bear dens applies only to "overland moves, seismic work, and any similar use of heavy equipment" (stipulation 20.a., DEIS, p. II-29.) This would seem to exclude exploratory drilling, production drilling, or construction of permanent facilities, including pipelines and roads, and explicitly does not apply to gravel extraction. Such activities should be explicitly added, and permits for any activities within the boundaries of the polar bear denning habitats identified in the Polar Bear Habitat Conservation Strategy (U.S. Fish & Wildlife Service 1995) should not be issued unless operators have first obtained authorizations for incidental take pursuant to the Marine Mammal Protection Act, and have committed to supporting a peer-reviewed monitoring program. (Stating that "operators are encouraged to obtain letters of authorization" for harassment or incidental take of polar bears is not a legally acceptable stipulation.) 063

The stipulations for mitigating impacts to caribou and waterfowl contained in the DEIS for the Teshekpuk Lake Special Area were products of the "Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop" (Teshekpuk Lake Workshop) sponsored by BLM May 21-22, 1997. (DEIS, Appendix E.)

Specific criteria apparently were not developed for a specified, desired level of protection nor for an acceptable level of risk. The workshop did not include a discussion by experts focused on using the best scientific information for defining areas of vital importance to the life cycles of waterfowl and caribou in the special area, and did not identify areas that should be withheld from leasing because the risks to molting geese and caribou were too great. The limitations of the workshop discussion and proceedings are reflected in the lease stipulations for the Teshekpuk Lake Special Area contained in the DEIS, and even workshop participants appear to have been very uncomfortable with some of these outcomes. 064

A bias toward oil development is also reflected in stipulation 24, (DEIS, p. II-30), which gives holders of leases within the Teshekpuk Lake Caribou Habitat LUEA responsibility for designing and implementing monitoring studies for caribou. This stipulation differs from the one suggested by the Teshekpuk Lake Workshop. The final stipulation which emerged from the workshop stated, "…Lessees shall fund these studies in proportion to acreage leased. The studies shall be designed and the ensuing work awarded through a joint state/federal/borough oversight committee." (DEIS, p. Appendix E-25.) The DEIS offers no explanation for abandonment of the independent monitoring program. While it is appropriate for the lessees to fund the studies as part of the price 065

paid for the opportunity to exploit publicly-owned resources for private gain, it is not appropriate to have the lessees control design and implementation of necessary studies. Contracting and decisions about the scope, design, implementation and review of monitoring studies under all alternatives should be carried out by the state, federal and local natural resource agencies who are responsible under law for managing these resources. 065

Stipulations relating to subsistence concerns, i.e., stipulations 61, 62 and 64, refer to a Subsistence Advisory Panel (DEIS, p. II-33), but it's not clear whether these are references to the existing federal subsistence advisory board (and its regional panel) or to the Subsistence Advisory Panel that was described in the recommendations that emerged from the NPR-A Subsistence Impact Analysis Workshop (NPR-A Subsistence Workshop) sponsored by BLM August 19-21, 1997 (DEIS, Appendix F). If the reference is to the latter, the DEIS should explain that BLM has accepted the workshop recommendation and intends to establish a Subsistence Advisory Panel. In addition, a description of the Panel, including size, membership and funding sources, should be included. If the panel will operate pursuant to the Federal Advisory Committee Act, as specified in the workshop recommendation, this needs to be made clear. If not, the operating procedures for the panel should be spelled out. Finally, it is not clear why the Advisory Panel recommendation emerging from the workshop includes only voting members from the village of Nuiqsut. Representatives of other villages in the region who utilize the migratory wildlife resources of the NPR-A, e.g., waterfowl, caribou, fish and polar bears, should have a voting membership on the panel. Given the importance of the migratory waterfowl resources of the northeastern NPR-A to subsistence users throughout Alaska and Canada two or more representatives of subsistence users outside the region should be included, e.g., the Waterfowl Conservation Committee of the Association of Village Council Presidents and a Canadian representative from communities that rely on waterfowl and other migratory birds. 066

To ensure adequate protection of subsistence resources, we recommend that resolutions reached during the consultation process described in stipulation 64 for resolving conflicts with development projects, including any conflict avoidance agreements developed, should be attached to exploration, development, or production plans for these projects. In addition, consultations should be required for subsequent modifications of exploration, development or production plans and permits for these projects. Many potential conflicts may not be apparent until specific permits are proposed, and therefore subsequent conflict avoidance agreements may be required. Any monitoring program for determining the effects of oil activities on subsistence (stipulation 61, DEIS, p. II-33) should be subject to scientific peer review and approval by the Subsistence Advisory Panel. As with the other stipulations, the subsistence stipulations should be included as leasing program and lease sale conditions, not permit conditions. 067

In addition to the concerns outlined above, we have the following specific concerns regarding the proposed stipulations for mitigating impacts from potential development in the northeastern NPR-A:

Stipulations 21-23 does not contain a prohibition on new gravel pads or artificial islands for exploratory drilling, and there should be a blanket requirement for winter-only drilling. 068

Stipulation 25 does not prohibit exploratory wells or pipelines. The explicit allowance for waiver or exception under Alternative E is inappropriate. 069

Stipulation 26 does not restrict temporary structures, including drill rigs or water withdrawal facilities. It also should specify that it applies to already disturbed sites such as Lonely DEW-Line Station or gravel pads remaining from earlier exploratory activities. 070

Stipulation 27 does not prohibit solid-fill gravel causeways. 071

Stipulation 34 allows construction, including sand and gravel extraction and transport, pipeline and pad construction, and drilling in the goose molting LUEA in Alternative B-E, with all activities except drilling suspended from June 5 to August 20 unless authorized. There is not a similar seasonal restriction for the caribou LUEA that covers the caribou calving period. 072

V. PROPOSED LAND TRADES MUST BE ANALYZED BEFORE FURTHER ACTION IN NPR-A IS CONSIDERED.

If Interior intends to entertain or support a land trade, then the issue should be addressed now, before the planning process for the northeastern NPR-A proceeds any farther. We do not believe a land trade within the NPR-A is in keeping with the purposes for which the Reserve was established. Nonetheless, a discussion of land trades has begun. The State of Alaska, several North Slope organizations and at least one federal agency have taken a position on land trades. Any land trade would obviously have substantial impacts upon the planning and management of the Reserve and should not be considered by Interior unless it is carefully scrutinized now, before this process goes forward. It should also be noted that any land trade in the NPR-A would require Congressional approval and, we believe, require preparation of a Legislative Environmental Impact Statement (LEIS). 073

VI. CONCLUSIONS AND RECOMMENDATIONS

Upon review of the Draft Integrated Activity Plan/Environment Impact Statement for the northeast National Petroleum Reserve-Alaska (DEIS), we conclude that it is not appropriate to open the Reserve to oil and gas leasing and development at this time. The DEIS fails to articulate how a decision to allow oil development in the NPR-A would fulfill the purposes for which the Reserve was established, i.e., to serve the energy needs

of the nation. There is a paucity of information in the DEIS regarding the size and extent of oil reserves in the northeast NPR-A, and the document contains no discussion regarding the nature of the West Coast oil market and current export levels for ANS crude oil. There is no discussion of current demand or alternatives for meeting that demand. BLM's failure to address these issues leads to a conclusion that the consideration of oil development in the NPR-A is based on immediate expediency and not on a rational energy policy.

We strongly recommend the question of oil development in the NPR-A be undertaken with more attention given to the nation's energy needs and alternatives to meeting these needs. The role that the energy resources of the NPR-A could fill in a comprehensive national energy policy, taking into consideration the predictions for continued increase in ANS crude production and continued stability of the export market for ANS crude should be analyzed and discussed in a new draft document.

We do feel it is timely to consider management strategies for protecting the surface resources of the NPR-A, particularly in light of expanding oil development to the east of the Reserve and potential development offshore to the north. We recommend that such management strategies be incorporated into a larger strategy for the American Arctic that considers the fisheries, wildlife and wilderness resources of America's only Arctic ecosystem, evaluates the cumulative and ongoing impacts of oil development in the region, and identifies areas that should receive permanent protection.

Ample evidence is currently available to BLM indicating that the wildlife and wilderness resources encompassed within the Teshekpuk and Colville River Special Areas in the northeastern NPR-A should be considered for permanent protection. The Secretary not only has the authority to present recommendations to Congress for wilderness and refuge designations within the NPR-A, but under the authorities of the National Petroleum Reserves Production Act, the Alaska National Interest Lands Conservation Act, the Federal Land Policy and Management Act, and The Wilderness Act, the Secretary can take administrative action to permanently protect these areas.

We commend the BLM for giving consideration to Wild and Scenic River designation for the Colville and encourage the agency to move forward with that proposal. The boundaries for this conservation area should encompass the existing Colville River Special Area, and management strategies for the river corridor should include protection of historic and archeological sites and continued access for subsistence users, as well as adequate protection for the wildlife resources sustained by this unique riverine habitat.

The Teshekpuk Lake Special Area should be accorded permanent protection that prohibits any leasing, or industrial development, including support facilities and transportation infrastructure. The rich and varied waterfowl resources of the region warrant full protection. In considering future management options for this Special Area, protection of these resources should be paramount given their importance to subsistence

users in the region and throughout Alaska and Canada, as well as their importance to hunters and wildlife watchers in the Pacific and Central Flyways and across the continent. For both the Teshekpuk Lake and Colville River Special Areas, permanent protection should be secured before any further oil and gas exploration and development is permitted in the NPR-A.

In addition, we think it is timely to evaluate the wildlife and wilderness resources within the NPR-A outside the boundaries of the designated Special Areas, and give consideration to what levels of protection these resources may warrant. We disagree with the rationale BLM provided in the DEIS for not considering any lands within the NPR-A for designation as wilderness, and suggest that. Clearly, the Secretary of the Interior has the discretionary authority to conduct such a review. We recommend that he do so.

Thank you for your time and attention to our concerns and recommendations. We look forward to reviewing the final Environmental Impact Statement, and again suggest that an opportunity for public review of the proposed action and selected alternative be provided prior to promulgation of the Record of Decision regarding management of the northeast NPR-A.

Sincerely,

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1851-001
In January 1998, the Department of Energy issued a draft Comprehensive National Energy Strategy for public comment. Three of the objectives of this strategy are to:

- reduce the vulnerability of the U.S. economy to disruptions in oil supply, in part by first stopping and then reversing the decline in domestic oil production by 2005;
- grow domestic energy production in an environmentally responsible manner, using advanced technology to recover more oil from reservoirs without significant environmental degradation, and supporting policies to allow our natural gas supply to grow by 6 trillion cubic feet by 2010; and
- accelerate the development and market adoption of environmentally friendly technologies, including climate-friendly technologies that use natural gas in ways that generate economic benefits while reducing greenhouse-gas emissions.

The BLM believes oil and gas leasing in the Northeast NPR-A Planning Area to be consistent with these goals.

The Department of Interior's fiscal year 1981 appropriations act (P.L. 96-514 codified at 42 U.S.C. Sec. 6508) mandated lands within the NPR-A be offered for competitive oil and gas leasing.

> There shall be conducted, notwithstanding any other provision of law and pursuant to such rules and regulations as the Secretary may prescribe, an expeditious program of competitive leasing of oil and gas in the National Petroleum Reserve in Alaska: *Provided,* the (1) activities undertaken pursuant to this section shall include or provide for such conditions, restrictions, and prohibition as the Secretary deems necessary or appropriate to mitigate reasonable foreseeable and significantly adverse effects on the surface resources of the National Petroleum Reserve in Alaska

The comment regarding the export of Alaskan North Slope crude oil is addressed in Response 1851-004.

The cumulative-case analysis has been expanded to include the projects listed in Table IV.A.5-1. The cumulative case also includes the analysis of the potential effects of oil-field development in three areas adjacent to the Northeast NPR-A Planning Area and a road that connects with the Prudhoe Bay/Kuparuk road system.

The comment does not define region but it is assumed to mean the North Slope of Alaska. Also the comment does not identify likely and predictable impacts outside the region. The BLM believes the final EIS will address the significant issues, both within and outside the "region," formulated during the scoping process and in the comments received on the draft EIS. Most of the effects that occur from any development that might result oil and gas leasing in the Northeast NPR-A Planning Area will occur on the Alaskan North Slope. The analysis in the EIS also includes the effects on:

- terrestrial (caribou of the Western Arctic Herd) and marine mammals (such as beluga and bowhead whales) that migrate out of the region;
- the endangered and threatened species along the tanker routes from Valdez to refineries along the West Coast of the U.S.;
- migratory waterfowl that are a subsistence resource for inhabitants of the Yukon/Kuskokwim Delta region (added for the final EIS); and
- the economy of Southcentral Alaska.

The BLM believes the alternatives presented in the EIS provide protection for the resources of the Northeast NPR-A Planning Area and adjacent areas within the context of the law mandating oil and gas leasing. The areal deferral alternatives, Alternatives A through E provide varying levels of resource protection by making various parts of the planning area unavailable for leasing. The stipulations recognize, and take into consideration:

- different oil and gas exploration and development will have different effects on the environment, and

- advancements in petroleum technologies have reduced direct impacts to the environment and assumes this trend will continue.

The stipulations were not based on the premise that they must not "adversely affect the viability of potentially commercial [oil] discoveries" as noted in the comment. This statement was taken out of context. The intent was to indicate one of the assumptions used to estimate activity levels shown in Tables IV.A.1.b-2 and IV.A.1.b-3.

The concern regarding land exchanges is addressed in Response 0106-003.

1851-002

Congress in 1980 (P.L. 96-514) authorized leasing in the NPR-A and directed the Department of the Interior to undertake "an expeditious program of competitive leasing of oil and gas" in the Reserve. That program ceased after 1984, when interest in leasing declined. Because there is interest in leasing again, BLM is examining whether and how it might best exercise its authority to lease in the NPR-A.

Existing legislation does not require that the government demonstrate an immediate need for oil. Basing leasing decisions on an immediate need would be inappropriate, given that discovery and delineation of prospective fields and building the production and delivery infrastructure takes at least 5 years. It is self evident that the nation requires petroleum resources. The most recent government statement on this issue is embodied in the Department of Energy's draft Comprehensive National Energy Strategy. The Department calls for stopping and reversing the decline in domestic oil production by 2005. For more on how the Department views the NPR-A's role in addressing the Nation's energy needs, see their comment letter printed elsewhere in this section.

For more discussions on the role of the NPR-A in the nation's energy future and the purpose of the Reserve, see Sections I.A. and I.B.1 of the EIS.

1851-003

The environmental analysis in the IAP/EIS is based on several hypothetical development scenarios tied to estimates of **undiscovered** resource potential. There are many assumptions and inherent uncertainties, in attempting to predict future activities. We fully acknowledge other scenarios may be equally plausible, and that changing information could result in a change in resource estimates. An accurate accounting of oil reserves is possible only after the production cycle is completed, perhaps decades into the future. Given that environmental analysis and decisions regarding leasing must be done now, we are forced to estimate future production volumes based on the available data.

Differences of opinion about future oil prices are as common as the number of economists making the predictions. We have simply used a range in prices to define reasonable limits for environmental analysis. Our economic analysis concluded that if long-term prices average <$15 per barrel, new stand-alone developments in remote areas of the NPR-A will not be commercially viable. "Reasonable" levels of activities are assumed to correspond to oil prices between $18 and $30 per barrel. We do not imply that long-term oil prices will average $30, only that this price and the corresponding resource volume provide an upper limit to activity levels. It is possible, as many commentors have claimed, that greater volumes of oil could be recovered at normal ($18) prices through the use of advanced technology. Because we cannot accurately predict the effects of advanced technology, the higher price ($30) provides a reasonable, upper-range indicator of future production activities.

1851-004

Currently, the U.S. imports about half of its oil resources. From a national balance of payments and long-range national security interest, the dependence on foreign countries for such an important commodity puts the U.S. at risk. We participate in a global economy, and the price of oil is governed by the global market. Transportation costs of getting oil to the markets is a real cost that affects what consumers and users pay. When we import more foreign goods than we export U.S. goods, we must make up the difference with dollars. The negative balance of payments weakens the buying power of the dollar, and we all must pay more in real costs for the goods that we as consumers use. Furthermore, our dependence as a nation on foreign oil makes us susceptible to another oil embargo like the one of 1973 and the economic havoc it created. Because our national economy is affected by the cost of energy, the maintenance of a strong and viable oil and gas industry in the long term is desirable. However, the production of oil or local supply and demand in the U.S. is not uniform across the nation. Some areas have little or no production and must bring oil and energy products into the area by tanker or pipeline. Other areas, such as the West Coast, have a surplus. This same phenomenon occurs with other products, and the U.S. has developed a superior transportation system to move goods to market. However, this movement of goods results in a transportation cost that must be incorporated into the cost of the product.

From an economic standpoint, it does not matter whether Alaskan oil is produced and exported to another nation or "exported" to another State. The final value and net economic value of the oil is affected by the transportation costs. If a system develops to export Alaskan oil to the Far East while importing foreign oil to the East Coast (at a lower net transportation cost, then the national economy and net balance of trade are affected because overall transportation costs have been reduced. If during a time of crisis, such as another oil embargo, Alaskan oil production could be diverted to other locations within the U.S., the economics of transporting oil would be altered.

Encouraging and maintaining a strong viable oil and gas industry in the U.S. keeps the capital, keeps jobs associated with oil production, and helps create a strong economy.

1851-005

The resource assessment for the Northeast NPR-A Planning Area used subjective methodologies and computer models that do not require the identification of the exact location of hydrocarbon pools. However, if the decision is made to conduct leasing in a portion of the planning area it is the government's responsibility to assure that fair market value is obtained for leases. Bids submitted by industry are evaluated by an independent team of geoscientists to determine whether adequate value (net present worth) has been offered for each lease. For this exercise, an accurate map is needed of the subsurface reservoir in relation to the established tract boundaries. The newly-acquired seismic data supplements older seismic-survey data, and will contribute to our tract-evaluation efforts. If they are requested, new maps will be incorporated into revised resource assessments in the future. However, the location of new fields will be defined only after wells are drilled to test depth of reservoirs. Commercial determinations usually require a number of delineation or appraisal wells, in addition to a specially designed seismic survey (typically a 3-D survey). Without drilling, current technology will allow only the identity of trapping structures that could possibly hold hydrocarbons. The government could conclude that leasing and drilling is the most effective way to accurately evaluate the resource potential in the NPR-A.

1851-006

The description of the affected environment is not intended, nor is it required, to be encyclopedic (40 CFR 1502.15). In the EIS Sections III and IV, the description of the environment and an analysis of impacts, bring to bear for the decision process the best available scientific information and observations of experienced, lifelong local residents. As described in Section VI, the BLM and MMS, who played a substantial role in drafting the IAP/EIS, have sought out local knowledge and scientific advice. These efforts included scoping meetings; a symposium in April 1997 that brought together some leading scientific and traditional knowledge experts on the resources in the planning area; a workshop in May 1997 on waterfowl and caribou that was attended by leading biologists from Federal, State, and NSB resource agencies; a workshop focusing on subsistence attended by representatives of North Slope villages; and a rigorous peer review of the data and analysis of drafts of the draft IAP/EIS. We are incorporating new information and making other corrections and clarifications based on specific suggestions for changes provided during the comment period on the draft.

1851-007
The commenter's request to include "maps showing the known locations of fish spawning, rearing, and overwintering habitats by anadromous, freshwater, and marine species," complete with survey locations and dates studied, is beyond the scope of an EIS. The studies cited in the draft EIS are among the best available. They provide a substantial body of baseline information that is considered more than adequate to assess the likely effects of the activities discussed in the draft EIS. Further information concerning the specific design, location, and timing of future individual activities is unavailable at this time. It is this reality that precludes the possibility of developing a more intensive site-specific effects analysis for individual activities, not the lack of maps, or baseline fisheries information.

1851-008
For concerns about the sufficiency of the analysis, please see Response 1851-006,

The IAP/EIS has specifically reviewed whether additional lands might appropriately be added to the existing Special Areas. The Preferred Alternative and Alternatives B through D would add the Pik Dunes to the Teshekpuk Lakes Special Area.

1851-009
The unique character of Teshekpuk Lake is identified in several special ways in the EIS; these include:

Section III.B.3. Fish (As noted in the Comment)
Teshekpuk Lake is reported to have the greatest species diversity (11 species)

Teshekpuk Lake Special Area in Sections I.B.2, and III.B.1:
- contains significant subsistence, recreational, fish and wildlife, historical or scenic value
- includes important nesting, staging, and molting habitat for a large number of ducks, geese and swans

Teshekpuk Lake Special Management Zone in Section III.B.1
- includes values for caribou and waterfowl

Teshekpuk Lake Watershed Land Use Emphasis Area (LUEA) in Section II.B.1
- includes the Teshekpuk lake watershed within the boundaries of the planning area and notes:
  - this LUEA is one of the most productive, diverse, and unique wetland ecosystems on the North Slope
  - the lake's range of habitat types includes a 20-ft deep basin and a complex shoreline with bays, spits, lagoons, island, beaches, and extensive shoal areas

Other LUEA's
In addition to the Teshekpuk Lake Watershed LUEA, there are four other LUEA's that include the lake or border the lake; including:
- Goose Molting Habitat LUEA (Sec. II.B.2 and Fig. II.B.2)
- Spectacled Eider Breeding Range LUEA (Sec. II.B.3 and Fig. II.B.3)
- Teshekpuk Lake Caribou Habitat LUEA (Sec. II.B.4 and Fig. II.B.4)
- Fish Habitat LUEA (Sec. II.B.5 and Fig. II.B.5)

In addition, there are:
- 9 figures in Section III.B.4 showing the density of various species of birds in the planning area
- a figure in Section III.B.5.a showing the summer and winter use of the planning area by caribou
- a figure in Section III.B.5.a showing moose, muskox, and wolverine habitat areas in the NPR-A
- three figures in Section III.B.6 showing distribution of spectacled and Steller's eiders in and the planning area
- five figures in Section III.C.3 showing subsistence use areas in and around Teshekpuk Lake, and
- a figure in Section III.C.6 showing the rivers flowing into or out of Teshekpuk Lake that have been reviewed for Wild and Scenic River Status.

While additional research would be useful, BLM believes there is enough information available about Teshekpuk Lake and the resources of the area to analyze the potential effects of oil and gas exploration, development on the lake, and its resources. The comment does not identify specific field studies, or any additional literature sources that might be used to describe the Teshekpuk Lake environment and analyze the effects of oil and gas development.

1851-010
Each of the areas identified was highlighted for its special values in the IAP/EIS. Indeed, the Preferred Alternative recognizes each of the areas for special consideration and/or restrictions, including restrictions on permanent surface structures.

1851-011
We disagree with the broad conclusion that assumptions regarding oil-field development are incomplete, unsupported, and the potential impacts are understated. Let us restate a qualifying remark on page IV-A-6 of the draft IAP/EIS: "Although the activities described in this report are applicable in a general sense, the actual timing and location of commercial-sized discoveries cannot accurately be predicted. Future petroleum projects in the NPR-A are likely to have special geologic and environmental conditions, and each project could require a unique site-specific approach to development." IAP/IS readers should be aware of the uncertainties of predicting the ultimate character of activities that may or may not unfold decades into the future. To generate reasonable scenarios for the foreseeable future, we believe it is prudent to base our projections on current, state-of-the-art engineering designs, particularly those that have been reviewed and approved by responsible governmental agencies. Relying on decades-old "proven technology," which is obsolete by current standards, is not a realistic model for future development. In the same way, we are reluctant to employ technologies that have not-yet been created. Although, we fully realize that technology will advance in the future. As a working definition, we carefully consider concepts that are "reasonable and foreseeable." We realize that other ideas are possible and no one can consistently predict the future.

With regards to "roadless" development, one must consider the many factors unique to the specific project site, among which are distance to existing infrastructure, availability of construction materials, costs, and the environmental impact of a permanent road. For modest-sized fields (by North Slope standards), roadless development is a win-win strategy. It is cheaper for industry and creates less environmental disruption. It should be recognized that remote fields can be connected by ice roads that allow transportation of heavy equipment and supplies for 4 to 5 months during the winter. Remote fields, in addition to ice roads, have alternate transportation systems (marine landing facilities and/or airstrips). With regard to future activities in the NPR-A, we assumed in the draft IAP/EIS that permanent roads would not be constructed for typical new developments for these main reasons:

1. Generally smaller field sizes, compared to multibillion barrel giants like Prudhoe Bay and Kuparuk, could not economically support the high cost of permanent roads.
2. The availability of suitable road construction material (gravel) is thought to be limited in the planning area.
3. The environmental impact would be greater for permanent roads, and would likely force expensive design modifications before approval.
4. Most construction activities are scheduled for winter months when overland travel is easier (on ice roads) and wildlife impacts are significantly lower.
5. Smaller fields in the NPR-A will not require the scale of operations necessary to maintain the multibillion barrel giant fields on the North Slope.

In the final IAP/EIS, permanent road construction will be limited by Preferred Alternative stipulations 27 and 48. In addition, while we believe a road across the planning area under any circumstance is exceedingly unlikely, we have analyzed one in the cumulative impact analysis (see Sec. IV.H).

Regarding the analysis of water needs, a discussion of water requirements for ice roads and ice-drilling pads is in Section IV.A.1.b(3). Water needs for drilling and production operations are discussed in Section IV.A.1.b(4). Water issues associated with waterflooding practices are in Section IV.A.1.b(5). The exact

location of water sources impacted in the in the NPR-A is missing from these discussions. However, an accurate analysis of the effects of draw-down is impossible without identifying the specific water source; this fact will not be known without site-specific knowledge of the proposed activity. Normally, a permitting process is involved with significant water use from a public source, and permit requirements could include surveys of potential water sources and monitoring of draw-down effects. It is premature to make judgments of effects when we cannot predict the location or scale of the activity (field size).

1851-012
Please see Response 1851-025.

1851-013
Regarding future pipelines, it is difficult to accurately assess the environmental consequences of pipeline corridors without knowing the location of new commercial-sized oil fields. The timing of discovery and development also will play a major role in the design of pipeline networks, where pipelines constructed for the first fields could be used by later projects. A general picture of the possible routes for main pipelines is shown in Figure IV.A.1.b-7. An attempt to portray the location of all undiscovered commercial fields and the associated pipeline network in the planning area is extremely speculative, so it was not included. We have assumed that the sales-oil pipeline from Alpine would carry at least some of the oil production from the NPR-A to the existing Kuparuk sales-oil pipeline. The TAPS is assumed to operate as the regional oil-transportation system. For future pipeline corridors in the NPR-A, we expect that route surveys and engineering designs will minimize adverse effects on wildlife, subsistence activities, and natural environmental conditions (hydrology). A detailed map of proposed pipelines would be available for public inspection when an operating plan is submitted following a commercial oil discovery.

1851-014
The environmental consequences of all alternatives on each resource have been assessed using the available scientific studies. The extent and precision of information on impacts varies among resources on the North Slope. As a consequence, we are able to provide relatively precise assessments of possible impacts on some resources, while in other cases we have to rely on the best professional judgment. It should be noted that the impact assessment benefitted from peer review by technical specialists outside BLM and MMS before the draft IAP/EIS was issued, and the final will benefit from comments submitted on the draft. Language indicating that impacts and/or recovery may not be detectable above natural fluctuations of the population are intended to put the fluctuations in a context, and not to dismiss that there may be effects.

1851-015
The example referenced by the commenter (semi-palmated sandpiper) is cited as an extreme case in Section IV.C.8.b(2). Text has been revised to indicate that other species studied, except the red-necked phalarope, also exist at lower densities near roads than in unroaded areas.

1851-016
The assumptions on the number of seismic operations is an average; from one year to the next, fluctuations might be higher or lower than the average. Currently, given that no decision has been reached on lands in the planning area that might be leased, oil companies may be gathering information speculating that a lease will be held. The projections of the level of seismic activity for Alternative A assumes that this IAP/EIS will adopt that alternative, and no leasing would occur. If there is to be no leasing, we believe it is appropriate to forecast minimal seismic operations in the area, because oil companies would not anticipate any leasing opportunities.

1851-017
The techniques and equipment used for 3-D seismic surveys are so similar to those used for 2-D surveys that few, if any, additional impacts are anticipated from the use of 3-D surveys. The main difference is the grid pattern, where 3-D survey lines tend to be more closely spaced than 2-D surveys. Other aspects of the survey, including sound source (Vibroseis), source frequency and power, recording equipment (geophones and cables), and support vehicles are essentially the same. As discussed in Section IV.A.1.b(3)(b) Seismic Surveys, a typical 3-D survey would use more personnel and cover a smaller area than a 2-D survey. Ground-impacting activities caused by placing geophones in the design array (foot traffic) would be more concentrated. Impacts associated with camp moves, where support modules are pulled by tractors to a new location, would be considerably less for a localized 3-D survey as compared to a more widespread 2-D survey effort.

1851-018
While the information about historical seismic activities would be useful, it is beyond the scope of this IAP/EIS. The types of activities that could have some effect on the environment were taken into consideration when developing stipulations for Alternatives A through E and Preferred Alternative stipulations applicable to seismic operations and overland moves. Although they might occur as the result of other types of activities, the effects of oil spills; fish and wildlife habitat disturbance; and disturbance and/or damage to cultural and archaeological sites or private property have been analyzed in Section IV of the EIS.

1851-019
The commenter has confused a brief, generic description of the USEPA's duties in Section II with the analyses of effects on water quality and air quality. Full analyses of effects on water and air quality are in Section IV.

1851-020
While it may be true that initial projections of gravel requirements for Prudhoe Bay were lower than actually required, there is good reason to believe that those projected in this IAP/EIS are more reliable. First, current understanding of the geology of the planning area is superior to that used 3 decades ago in projecting Prudhoe Bay's future. For example, 3-D seismic has greatly improved geologic knowledge. Second, as outlined in Response 1851-011, oil companies have a great incentive to avoid using gravel for both economic and environmental reasons. These reasons were not so prevalent on State lands where gravel was widely available. In future years, advancements in technology likely will focus on further minimizing needs for gravel. Finally, the alternatives assume oil production and infrastructure for oil at $30 per barrel, a price above the norm. Consequently, development and gravel demand is likely to be less than assumed for the analysis.

1851-021
The BLM has expanded Section III.B.4 to provide additional information regarding migratory bird treaties and stakeholders potentially impacted by decisions affecting the planning area. Additional information regarding cumulative impacts of actions and development outside of the planning area is analyzed in the cumulative case. The Preferred Alternative prohibits leasing in the goose molting area for the life of the IAP/EIS and restricts surface occupancy south, east, and west of Teshekpuk Lake; this provides further protection for goose populations in the Teshekpuk region.

1851-022
Response of brant to aircraft is discussed in Section IV.B.8.a(2).

1851-023
Stipulations currently appearing in the EIS would prevent major hydrological changes and alteration of critical lakeshores used by foraging geese. Sensitivity of brant to aircraft is discussed in Section IV.B.8.a(2). Potential energetic consequences of brant disturbance can only be inferred at this time, on account of, energy costs have not been directly measured. Because the pertinent studies have not been done, the commenter is correct in stating that the cumulative risk from all factors may not be acceptably diminished. However, stipulations listed in Section II probably would decrease risk to an acceptable level.

1851-024
The statement that effects along river corridors has been underestimated is not supported by any additional

information. Additional discussion concerning raptors has been included in Section IV.C.8.a. and b.

1851-025
The Cumulative Case analysis in the final EIS has been expanded to include potential effects from the activities listed in Section IV.A.5, Table IV.A.5-1. The potential effects of these activities are analyzed in Section IV.H, Cumulative Case Analysis. The activities list includes 18 producing oil and gas fields—5 fields that are being developed and/or planned (including activities associated with obtaining the required permits), 12 fields that are hypothesized to be developed within the life of this plan (10-15 years), and 10 other discoveries/fields that are hypothesized to be developed after 10 or 15 years. The 1996 production rate and reserves for the producing fields are shown in Table IV.A.5-2. The infrastructure and facilities for the producing fields are shown in Table IV.A.5-3. Estimated reserves and proposed infrastructure and facilities are shown in Tables IV.A.5-4 and 5, respectively, for the fields being developed or planned. Table IV.A.5-6 shows those fields that might be developed within 10 to 15 years and their resource estimates, if this information is available to the public.

For a variety of reasons, some discoveries may not be economic to develop within the next 10 to 15 years. These reasons may include any or all of the following:
- an estimated amount of oil that is too small to be economically developed,
- distance from existing infrastructure, or
- lack of appropriate technology.

Hypothesizing when these discoveries might be developed is speculative. Industry interest in developing these fields appears to be low, and there is no publically available information about planning private efforts. Any potential effects that might be associated with developing these discoveries/fields would be based on current information and knowledge. Industry has been developing strategies to reduce the impacts associated with development, and it seems reasonable to expect this trend to continue. Thus future impacts might be less than are estimated in Section IV.H of the final EIS.

The cumulative case includes an analysis of an existing pipeline facility—the TAPS—and three proposed natural gas facilities—the TAGS, ANGTS, and a natural gas to liquids conversion facility (Table IV.A.5-1b).

The potential effects of future oil and gas lease sales also are considered in the cumulative case (Table IV.A.5-1c). These include:
- Federal oil and gas lease sales in the Beaufort Sea (OCS Sales 170 and 176) and in the western NPR-A and
- State of Alaska areawide sales in the North Slope, Beaufort Sea, and North Slope Foothills.

The level of activity associated with future oil and gas lease sales is very speculative. Until exploration wells are drilled and evaluated, there is no way of knowing the resources that might be in any of the areas that could be leased. However, some hypothetical scenarios have been developed to analyze the potential effects of developing three oil fields, one located offshore of the Northeast NPR-A Planing Area north or northwest Smith Bay (please see Response 1851-033), in an area west of the planning area, and on Native lands near Nuiqsut (Sec. IV.A.5). The potential effects from a variety of activities and facilities are included in the analysis of these scenarios. These activities and facilities include: a pipeline across the northern part of the planning area north of Teshekpuk Lake, another pipeline across the southern part south of the lake; onshore staging for offshore development; construction and supply activities; oil spills; and a gravel road connecting possible NPR-A oil fields with the Prudhoe Bay/Kuparuk road system.

The development of the onshore oil fields between the Canning and Colville rivers has occurred on State of Alaska lands, the State does not require the preparation of a document comparable to a Federal EIS. The NEPA requires that an environmental impact statement be included in every recommendation, or report on proposed legislation, and other major Federal actions significantly affecting the quality of the human environment. Although the State is not required to conduct a NEPA analysis, BLM is committed to fully complying with the requirements of Federal law including a cumulative impacts analysis which considers past, present and reasonably foreseeable future State leasing actions.

1851-026
Table IV.A.5-3 indicates that there are 415 mi of active pipelines on the North Slope. This estimate was produced by a Department of Energy contractor (Eg&G Idaho, Inc. 1991). This figure will be used in Section IV.H, the Cumulative Case. It is common on the North Slope to "bundle" pipelines, that is, to place other types of pipelines (noncrude carriers) within the same pipeline corridor. The 1,100 mi of pipelines you quote may be partially or entirely because of the fact that multiple numbers of pipelines can and do use the same pipeline corridor (1,100 mi of pipelines but 415 mi of actual pipeline route).

For an analysis of the oil-field related road systems, please see Response 1851-027.

1851-027
Table III.A.5-3 has been added to update the EIS regarding the North Slope infrastructure. Text in Section III.C.7 has been revised accordingly. Regarding how many miles of roads there are on the North Slope, a Department of Energy contractor placed the milage at 384 in a later publication (Eg&G Idaho, Inc., 1991). The different estimates of road milage may stem from different opinions as to what actually constitutes a road. In the beginning of North Slope development, gravel roads were constructed to exploration wells. If the wells failed to produce, the gravel road and exploration pad were left in place, relics serving no purpose to surrounding field development. Subsequently, the State has worked with the field operators to incorporate relic roads into field development strategies. Relic pads and serving roads, once counted as active, may have served as a convenient source of gravel for other road and pad construction. Table IV.A.5-3 gives figures for total acres covered by gravel from all infrastructure sources.

Regarding how NPR-A roads will connect to the Prudhoe system, see the discussion in Section IV.A.1.b.(6)(e). Under the Preferred Alternative permanent road connections between the planning area and the existing road network to the east is prohibited.

1851-028
The 1987 study was used in developing this IAP/EIS. The updated study suggested by the commenter would be an interesting and valuable one; however, it is not necessary to complete such a study before completing this plan. The Interagency Research and Monitoring Team should consider the commenter's proposal.

1851-029
We agree that there are significant questions related to the amount of CO_2, methane, and other greenhouse gases that may originate from oil and gas developments. The BLM will carefully consider such information in permitting new development of newly-discovered resources in the NPRA and will require, to the extent feasible, that the latest scientific information be considered and the best available technology be used to minimize emissions and reduce contributions of such gases to the global atmosphere. Please see Section III.A.4.a, which has been added to the final EIS, and Response 1951-017.

1851-030
Please see Response 1851-025.

1851-031
The purpose of the IAP/EIS is to address potential impacts in the Northeast NPR-A Planning Area —not to review ongoing operations in adjacent areas. The impacts from actual operations are used as representative models to analyze potential impacts of future projects in similar settings. The operations in areas adjacent to the plan area are included in the Cumulative Case analysis.

1851-032
The Prudhoe Bay and Kuparuk oil fields are likely to be the initial staging areas for exploration or development activity in the NPR-A. While Umiat airport may become a staging area for activities in the

planning area; especially, if development occurs in the area of low or medium oil potential in the southern part of the area, it is unlikely to become a hub for pipelines or roads in the foreseeable future. Pipelines will focus on connecting oil fields with the pipeline for the Alpine development. We do not anticipate that Umiat would attract a road. If an oil field develops very near Umiat, it might prove prudent to link the oil development with the airport instead of building an airstrip at the development. The impacts of such a road essentially would be the same as a road connecting the infield facilities analyzed in Section IV. The impacts associated with using Umiat as a center for air-based or other operations are properly within the scope of cumulative analysis. These impacts are not considered to be substantial because Umiat is a well-established facility that has operated for decades as a base for research (including oil and gas exploration) and recreation trips for many decades.

1851-033
The cumulative case has been expanded to include the potential effects associated with the development of an oil field in marine waters north or northwest of the NPR-A; please see Response 1851-012.

The oil-spill scenario presented by the commenter was based on a high-case resource estimate of 3.9 billion barrels of oil for OCS Oil and Gas Lease Sale 144. There is a 5-percent probability of finding this amount of oil. Also, the resource estimate was based on an area of 9.8 million acres in the sale area. Sale 144, held is September 1996, resulted in leasing about 100,000 acres or about one percent of the sale area. The amount of oil that might be discovered and produced as the result of Sale 144 is expected to be considerably less than 3.9 Bbbl.

1851-034
Please see Response 1851-025. Also, the Preferred Alternative would not permit pipelines to cross the northern part of the planning area, nor would it allow shore-based facilities for offshore production.

1851-035
Please see Response 1851-025. The cumulative impact analysis has been revised to address the construction of a road linking hypothetical oil and gas development west of the Ilipikpuk River to the Alaskan road network via the planning area and Deadhorse. This type of road would not factor into the cumulative analysis of the Preferred Alternative because that alternative prohibits such a road. The analysis does not discuss impacts from coal development; we believe that any coal development most likely would require a link to saltwater through the road associated with the Red Dog mine.

1851-036
The final permits for the Alpine project were approved by the Army Corps of Engineers on February 13, 1998, and construction on this new field is under way. Projected startup of production is scheduled for 2001. The Alpine development project will include production, support facilities, and a sales-oil pipeline connection through the Kuparuk pipeline to the TAPS. Because of its location, it is reasonable to assume that Alpine could be integrated into future plans for fields in the NPR-A. During the initial writing of the draft IAP/EIS, approval for the Alpine project was not final. However, this project now is formally approved and is progressing toward completion.

Although operational aspects of the innovative design features for Alpine have not been proven by experience, this project does represent a reasonable example of state-of-the-art design and technology for North Slope operations. We acknowledge that the engineering concepts from Alpine could be modified for different site-specific conditions and through actual experience. The fast-changing pace of North Slope development innovations can make "proven" designs effectively obsolete, and therefore, not particularly useful for projecting future development activities. We will offer one example: The typical footprint of production pads has been reduced by 80 percent, largely by placing wellheads closer together and replacing open reserve mud pits with tanks. We have chosen to base our analysis on current construction designs rather than on "proven" technology that is decades old (Prudhoe Bay and Kuparuk were developed in the 1970s).

1851-037
Alpine is considered to be a reasonable model for future fields in the NPR-A (please see Responses 1652-036 and 1660-081) for a number of reasons. Although exploration activity continues in the Colville River Delta, no other development plans have been formally submitted; therefore, it is difficult to accurately describe the layout or coordination of future facilities. The effects of projects in areas outside the planning area are discussed in the Cumulative Case analysis (Sec. IV.H).

1851-038
Questions regarding "unproven technology" have been raised and responded to in Responses 1652-031, 1664-011, and 1851-036. To summarize these comments:

1. The projects used for representative examples have been reviewed and approved by various government agencies with permitting responsibilities.
2. These projects represent state-of-the-art technology for North Slope operations, where designs reasonably can be projected into the foreseeable future for NPR-A operations.
3. These current projects are better representations of future activities than "proven" but now obsolete engineering concepts.
4. General models are applicable in a broad sense, and individual projects could be modified somewhat to accommodate site-specific conditions.
5. We cannot accurately predict the future; whether it is where new oil fields will be discovered, or unforeseen problems that will require new engineering solutions.

1851-039
Please see Response 1851-038.

The primary objective of Alternatives A through E Stipulation 28 is to prevent blockage of caribou migration and disturbance of female caribou and their calves with two key corridors. Other than subsection d, this stipulation puts lessees on notice that surface occupancy, specifically above-ground pipelines, in these corridors may be restricted. If a discovery were made that required surface facilities in this area, site-specific determinations regarding what facilities might be allowed and the risks of various options would be made as a part of the drilling permit and development plan review process.

Under the Preferred Alternative, permanent facilities and exploration and delineation wells are prohibited in the corridors (see Fig. II.C.1-6). See Also Preferred Alternative Stipulations 31 and 38.

1851-040
Concerns regarding interests of stakeholders outside the Beaufort Sea region are addressed in Response 1450-001. Text regarding this topic has been added to Sections III.B.4 and IV.C.8.b(4).

1851-041
Please see Responses 1314-004 and 1450-001 for a discussion of potential impacts on subsistence harvests to hunters in the Yukon-Kuskokwim Delta region.

Concerns regarding interests of stakeholders outside the Beaufort Sea region are addressed in Response 1450-001. Text regarding this topic has been added to Sections III.B.4 and IV.C.8.b(4).

1851-042
The draft EIS does not allow oil and gas exploration and development to proceed while ignoring obligations under the Endangered Species Act (ESA). The Fish and Wildlife Service has determined that designating critical habitat for spectacled and Steller's eiders would provide no net benefit for these species. These species are fairly widely dispersed in remote habitats that remain predominantly unaltered and uninhabited. Current and planned Federal activities are likely to affect a limited portion of these species habitat. ESA Section 7(a)(2) and regulations in 50 CFR Part 402 require Federal agencies to assure, through consultation

with the Fish and Wildlife Service, that activities authorized, funded, or carried out by the agency are not likely to jeopardize the continued existence of the listed species, destroy, or adversely modify their habitat. This Endangered Species Act consultation process has been completed.

1851-043
Stating that the reaction of eiders to disturbance in oil fields is not well understood does not mean that the analysis in the draft EIS is flawed. The text is simply reporting the results of several studies where eiders were observed at varying distances from sources of disturbance. There likely is a great deal of variability with individuals of each species and also with the noise levels from the different noise sources. It is highly likely that some individuals are more tolerant than others of noise or other disturbance factors. There also could be some seasonal variability that may be more pronounced during particular activities, such as nesting. The draft EIS has provided the best available information regarding how eiders may react in a particular situation. This same information is used in preparing the Biological Evaluation for the ESA Section 7 consultation with the Fish and Wildlife Service. As stated in Response 1851-042, the ESA consultation has been completed. The Service has provided some reasonable and prudent measures to minimize impacts of incidental take of spectacled and Steller's eiders.

1851-044
We have revised our subsistence findings to reflect the proper significance rationale. Using this rationale, however, we still find that the significance rationale would not apply to Alternatives B. Under Alternative C, the significance rationale would apply under the multiple sale and cumulative impact contexts.

1851-045
Findings are made after 810 procedural requirements, including hearings, are complete and are contained in Appendix D.

1851-046
The examination of past spills on the North Slope of Alaska shows that oil spills typically are small. Almost all of the small spills occur on the gravel pad and are often into secondary containment. The BLM assumes that the chronic spill component does not reach the environment because these spills generally occur on the gravel pad. An analysis of spills reaching marine water from a spill into the Colville River has been added for each of the alternatives.

The effects of fuel oil spills on marine mammals are analyzed in Sections IV.F.9.b and IV.F.10. The potential for an oil spill along the tanker route off the coasts of Washington, Oregon, and California and the potential effects to endangered and threatened species are discussed in Section IV.C.10(c).

In addition, the cumulative case, Section IV.H, has been revised to include offshore oil development and the analysis of the effects of a crude-oil spill in the marine environment.

1851-047
Figure IV.A.5-1 has been updated to reflect this comment.

1851-048
The resource assessment for the Northeast NPR-A Planning Area was based on subjective analysis of geologic plays. Geologic plays are related groups of hydrocarbon pools that share common characteristics of trapping mechanisms/types, reservoir traits, and oil/gas sourcing histories. While some of the analysis is based on available mapping, much is based on inference and analogs to more throughly studied areas. The geologic database is almost constant being revised, new concepts emerge and the older analysis is refined. Seismic data analysis in the NPR-A probably will never be fully completed. New data are collected, and the technology of processing and interpreting the data advances through time. The effort now under way by MMS/BLM is to update the subsurface mapping of the NPR-A; this has not been thoroughly reinterpreted in more than a decade. As described in Response 1851-005, the exact location of prospects is vital to an accurate evaluation of fair market value for bids received in a lease sale. Completing the current phase of seismic interpretation will provide additional information for our tract evaluation efforts, should a lease sale occur. New mapping will be incorporated into future, broader scale, resource assessments. The methodology for resource assessment using the PRESTO computer model is briefly discussed in Section III.A.1.a(3), and in a number of referenced publications. The 1995 National Resource Assessment for the Federal Offshore used the same concepts and analytical models; this effort was thoroughly reviewed by a broad spectrum of industry, government, and scientific groups .

1851-049
Regarding potential displacement and habitat alteration effects with multiple sales, the text in Section IV.F.8.b (first sale as well as multiple sales) has been revised to include clarifying statements and citations.

1851-050
The draft EIS recognizes the potential severity of impacts to the Teshekpuk Lake Herd in Section IV.F.9.a (Alternative E analysis). However, Arctic Slope populations of muskoxen, moose, grizzly bears, and arctic foxes are not expected to be affected.

1851-051
Please see Responses: 1658-004, 1658-058, 1851-056, and 1951-002, .

1851-052
One purpose of this IAP/EIS is to analyze the impacts of a single oil and gas lease sale and a series of sales. Each alternative, except Alternative A, analyzes the impacts of leasing for a given area and assumes that repeated sales will occur. The assumption is that each sale would offer all unleased tracts in the area determined in the Record of Decision for this EIS as available until all desirable tracts are leased. In this way, all foreseeable exploration, development, and associated impacts are evaluated for managers and other readers. We have not identified tracts or the time of sales. Before any sale, we will evaluate whether the impact analysis in this IAP/EIS is still valid. The BLM does not believe specific timing and tract configurations would significantly alter the analysis.

1851-053
A sentence has been added to Section I.B.5 to clarify that second and subsequent sales would be limited to the area made available by this IAP/EIS. A decision to lease additional areas would require a new EIS.

1851-054
A supplemental draft IAP/EIS would be appropriate, if the Preferred Alternative in this final IAP/EIS was outside the range of the alternatives in the draft. We do not believe that is the case. For example, the area made available for leasing in the Preferred Alternative falls approximately between those contemplated in Alternatives C and D.

It is incorrect to suggest that BLM had a preferred alternative at the time it issued the draft IAP/EIS. Federal regulations (40 CFR 1502.14(e)) provide that agencies only need to identify a Preferred Alternative, if they actually have one. Policy makers have benefitted by comments submitted by the public, the Federal Agencies, and by the State and the local governments. Suggestions put forward during the public comment period have been crucial to formulating the Preferred Alternative. We believe offering the public information about the resources of the area, and the potential impacts on them for a range of alternatives, served very well to elicit constructive comments from all interested parties. As a result of this approach, policy makers could work from a clean slate in constructing a Preferred Alternative based on the public's comments.

1851-055
The Council on Environmental Quality in its *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations* has offered the definition that "no action" means "'no change' from

current management direction or level of management intensity." The regulations state that "the 'no action' alternative may be thought of in terms of continuing with the present course of action." Regarding oil and gas leasing, the current "level of management intensity" and "the present course of action" is that we are not conducting any leasing. Based upon the 1983 EIS, we do not believe that we can lease. To adopt as the "no action" alternative, a scenario that would have BLM lease all parts of the planning area (except those deleted in the 1983 EIS) simply would not reflect reality.

It is not true to suggest that Alternative A is less protective than the management adopted as a result of the 1983 EIS. Alternative A, by reflecting current management in the NPR-A, would preclude leasing in the entire planning area; this includes the SMZ's, not just in the deletion areas of the 1983 EIS. Alternative A would prohibit oil and gas leases in the planning area, unless another EIS is conducted to make lands in the area available. To adopt the deletion areas in the 1983 EIS, as part of this IAP/EIS process, would offer no greater protection. Management decisions made in one EIS can be reversed by management decisions made through another EIS.

1851-056
The alternatives in the draft IAP/EIS present a range of protections for surface resources and values in the Special Areas and other areas within the northeastern part of the Reserve. The NPRPA requires "maximum protection" in the Special Areas consistent with the purposes of the act, which is to provide for the energy needs of the Nation. The IAP/EIS process is about determining a combination of protections that provide "maximum protection" while meeting the mandate that the NPR-A be used to address the nation's energy needs. Congress did not intend that maximum protection preclude leasing. Note that the House of Representatives managers of the legislation stated that "'maximum protection of such surface values' is not a prohibition of exploration-related activities" within Special Areas (*United States Code Congressional and Administrative News*, 94th Congress, 2d sess., 2:523)

1851-057
The Preferred Alternative recommends that the Pik Sand Dunes LUEA be added to the Teshekpuk Lake Special Area. It also recommends that an area encompassing approximately 2 mi on either side of the Kikiakrorak and Kogosukruk rivers and the tributaries of the latter river be added to the Colville River Special Area. Protective measures for all lands within the planning area, including LUEA's, will be applied through stipulations to leases and permits instead of developing new regulations. Decisions about whether and the circumstances under which to lease within a given LUEA are based on the resource values present—not on the fact that the area is identified as a LUEA.

1851-058
Legislative designations of part of the planning area as wilderness or a wildlife refuge are outside the scope of the current planning effort. In Section 1A of this final IAP/EIS, the purpose of this planning effort is to determine how BLM can best administratively manage the diverse resources of the northeast portion of the NPR-A consistent with the existing statutory direction for manage-ment. This planning does not include proposing new or different legislative designations that would change the basic statutory management direction for the area. It requires balancing the NPRPA directives that encourage oil and gas leasing while requiring adequate protection of important surface resources and uses. An evaluation of other legislative management regimes that Congress has applied to different designated public lands would not meet BLM's management objectives in preparing the IAP/EIS. Therefore, they are beyond its scope.

With respect to wilderness, ANILCA § 1320 makes such reviews discretionary on BLM-managed lands in Alaska, and P.L. 96-514 states that section 603 of the Federal Lands Policy and Management Act of 1976 (90 Stat. 2743) (BLM wilderness study) shall not be applicable to the NPR-A. Because wilderness designation would not meet the purposes and objectives of this planning effort as described in Section 1A, the BLM decided not to consider possible wilderness designation for the planning area.

As described in Section 1.A., the designation as a wildlife refuge would not meet the purposes and objectives of this planning effort. Refuge designation was not considered to be a reasonable alternative, especially, given Congress' rejection of such proposals during the debate and passage of the Alaska National Interest Lands Conservation Act.

A review of Wild and Scenic River eligibility and suitability is required by the Wild and Scenic Rivers Act in conjunction with agency land use planning efforts, 16 U.S. C. § 1276(d). So we incorporated a review and recommendation process in this IAP/EIS to satisfy that statutory requirement.

1851-059
While the draft EIS under the various alternatives puts forth several hypothetical recommendations relating to the Colville River's inclusion in the Wild and Scenic River (WSR) System, the draft EIS did not make an actual recommendation. Although, BLM agrees the Colville River has remarkable values, ownership/management responsibility of the river and its banks is shared by the State of Alaska, the Arctic Slope Regional Corporation, and the BLM. Neither the State of Alaska nor the Arctic Slope Regional Corporation supported inclusion of the Colville River in the WSR System. Without that support, the Colville is unmanageable as a component of the Wild and Scenic River System. Accordingly, WSR designation of the Colville was dropped from the Preferred Alternative in the final IAP/EIS. However, under the Preferred Alternative, measures will be taken to insure protection of important wildlife and scenic values.

1851-060
Please see Responses 1658-004, 1851-056, and 1951-002.

1851-061
The only way to scientifically measure the effectiveness of mitigation would be to have a test area with mitigation, and a control area without mitigation. Such a test would not be valid because it would be impossible to environmentally isolate the test and control areas.

The draft EIS recognizes that mitigating measures will not be completely effective. See the discussion of Residual Impacts in Section IV.F.9.a (Terrestrial Mammals). However, BLM is committed to implementation of an effective Interagency Research and Monitoring Program that will include monitoring the effectiveness of the stipulations.

1851-062
All Preferred Alternative Stipulations will be attached to the lease.

1851-063
This comment is addressed in Preferred Alternative Stipulation 77. According to the FWS, because the Marine Mammal Protection Act allows the incidental/passive take of marine mammals without a letter of authorization, their authority is limited to "encouraging" lessees to obtain a letter of authorization for incidental take and does not extend to "requiring" the letter. FWS, on a site-specific basis during the permitting process, may impose additional avoidance, protection, or mitigation measures.

Overland moves and seismic activities may be prohibited near past denning locations because these activities can be diverted to avoid dens. However, the location of dens varies greatly from year to year. Exploration and production drilling may occur in an area where no dens have been or are located. However, a polar bear may decide to den within 1 mi of the drilling activity the following year. It would be difficult to avoid all future locations of polar bear dens along the coast because drilling probably would occur at a specific location for more than 1 year. If a disturbance of polar bears is likely, operators are encouraged to obtain letters of authorization and may be required to do so under the Marine Mammal Protection Act.

1851-064
Early in the planning process, the planning team identified areas of special value to caribou and molting

geese. These are the Teshekpuk Lake Caribou Habitat LUEA and the Goose Molting Habitat LUEA. Prior to holding the workshop, the team already had identified alternatives that would make those areas unavailable for leasing. To explore the full range of reasonable alternatives while protecting important surface resources, we convened the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop to gather leading biologists' input on the protections we should apply to these habitats under alternatives that would make them available for leasing.

1851-065
This comment is addressed in Preferred Alternative Stipulation 29. Study design shall be approved by the Authorized Officer in consultation with the Interagency Research and Monitoring Team. The Preferred Alternative includes creation of an Interagency Research and Monitoring Team with representatives from Federal, State, and NSB resource agencies and the oil and gas industry, (Sec. II.F.7). Research designs and reports issued by participating agencies following the guidance of the interagency team will be subject to independent scientific review prior to completion.

1851-066
All references in the stipulations to the Subsistence Advisory Panel are to the panel as described in Section II.F.6. The BLM will create the Subsistence Advisory Panel, pursuant to the Federal Advisory Committee Act, after the ROD is issued and in time for operation about the date on which leases are issued. After the ROD is issued the BLM, in consultation with local communities and appropriate Federal, State, and NSB resource agencies, will develop and implement a plan to create the panel. All specific decisions regarding size, membership, funding sources, and operating procedures will be made at that time. The BLM will consider the recommendations of the NPR-A Subsistence Impact Analysis Workshop, and is very interested in the NSB's recommendation that the existing NSB Fish and Wildlife Management Committee serve as the panel. Given the lack of precedence for this significant and innovative advisory body, BLM is committed to taking the time to do it right. Hasty attempts to create the panel, before the ROD is issued, and without adequate consultation and review, are likely to detract from the quality of the final product and diminish opportunities for success.

1851-067
This comment is addressed in Preferred Alternative Stipulations 60 and 62. Stipulation 62 requires inclusion of conflict avoidance agreements in exploration and development plans. Stipulation 60 requires the subsistence monitoring plan to be approved by the Authorized Officer in consultation with the Interagency Research and Monitoring Team and the Subsistence Advisory Panel. Also, please see Response 1851-062 regarding issue of lease sale conditions.

1851-068
This comment is addressed in Preferred Alternative Stipulation 27. While we do not anticipate summer exploration activities that are likely to occur in the planning area, we are not prepared to support a blanket winter-only prohibition that would preclude exploration from an existing production pad.

1851-069
Alternatives A through E, Stipulation 25 has been deleted from the Preferred Alternative Stipulations given that the goose-molting area is unavailable for oil and gas leasing, exploration, or development.

1851-070
The Preferred Alternative prohibits construction of any oil and gas structures in the Goose Molting LUEA, and prohibits oil and gas surface occupancy within those portions of the insect-relief corridor that are outside of the Goose Molting LUEA. Consequently, Alternatives A through E, Stipulation 26 was deleted from the Preferred Alternative Stipulations.

1851-071
The impact of continuous-fill causeways is the source of considerable debate among water-quality and fisheries experts. Preferred Alternative Stipulation 31 prohibits causeways and docks in river mouths and deltas. For other areas, the stipulation discourages continuous-fill causeways, establishes performance standards to protect water quality and fisheries, and requires consultation with appropriate Federal, State, and NSB regulatory and resource agencies prior to potential authorization. The BLM is not prepared to prohibit causeways throughout the planning area, especially, when it may be the only feasible and prudent option available for development of a specific field.

1851-072
The best empirical data available and relied upon by the caribou working group at the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop held May 21-22, 1997, suggests that large and noisy equipment (i.e., associated with large construction activities) has a greater disturbance effect on geese than routine, light vehicle traffic. Alternatively, studies of caribou behavior suggest that routine traffic along roads has a greater effect on the distribution of parturient cows. Preferred Alternative Stipulation 49 is designed to mitigate this impact on caribou.

1851-073
Alternatives involving land exchanges have not been considered in detail in this IAP/EIS. They are outside its scope and do not meet the purposes and objectives of this planning effort as set out in Section I.A. For a more complete discussion of why exchanges have not been considered, see Sec. II.G.

David O. David, Chairperson
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Phone (907)543-3521
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AVCP, INC.
The Association of Village Council Presidents
Office of Administration
Pouch 218, Bethel, AK 99559

1852

March 10, 1998

Gene Terland
Bureau of Land Management
Department of the Interior
Alaska State Office
222 W. 7th Ave.
Anchorage, AK 99513-7599

Akiachak
Akiak
Alakanuk
Andreafsky
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Bethel
Bill Moore's Sl.
Chefornak
Chevak
Chuathbaluk
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Crooked Creek
Eek
Emmonak
Georgetown
Goodnews Bay
Hamilton
Hooper Bay
Lower Kalskag
Upper Kalskag
Kasigluk
Kipnuk
Kongiganak
Kotlik
Kwethluk
Kwigillingok
Lime Village
Marshall
Mekoryuk
Mtn. Village
Napaimute
Napakiak
Napaskiak
Newtok
Nightmute
Nunapitchuk
Oftogamiut
Owenville
Paimiut
Pilot Station
Pitka's Point
Platinum
Quinhagak
Red Devil
Russian Mission
Scammon Bay
Shageluk's Point
Sleetmute
St. Mary's
Stony River
Tokusook Bay
Tuluksak
Tuntutuliak
Tununak
Umkumiut

Dear Mr. Terland:

001 The Association of Village Council Presidents', Inc. (AVCP) and the Waterfowl Conservation Committee (WCC) write to you in regard to the proposed oil leasing areas of the National Petroleum Reserve - Area (NPRA). The leasing proposal was only recently brought to our attention after a thirty-day extension was filed by the North Slope Borough (NSB), and the State of Alaska invited us to their consultative discussion in Anchorage on Thursday, February 19, 1998.

We understand under the NEPA process you held a subsistence workshop in August of last year in which obviously no one from the Yukon Kuskokwim Delta was notified. We were very disturbed to see that we were not brought in on discussions as stakeholders on this issue. The Alaska Department of Fish and Game (ADF&G) informed the BLM as early as last year during the beginning of public comment that AVCP/WCC should be consulted because seventy to seventy-five percent of our Yukon-Kuskokwim Delta black brant migrate to the NPR area to molt in the late summer.

002 The Y-K Delta as a region have a long history in our endeavor to sustain and conserve abundant migratory bird populations for future subsistence use. We have made sacrifices and worked hard for the conservation of the migratory black brant for the past fifteen-years. The people of the Y-K Delta are primary stakeholders of waterfowl, our customary and traditional use of birds has long been used as part of our diet and culture. The destructive development and habitat loss conducted by those areas of the Pacific Flyway throughout the 1960's, 70's and 80's, significantly affected waterfowl populations. As a result, our subsistence hunters and gatherer's had to curtail migratory bird use to conserve and rebuild migratory bird stocks. It is through our co-operative efforts with the Pacific Flyway Committee and Council (PFC), US Fish and Wildlife Service (USFWS) and the ADF&G, and the development of the Yukon-Kuskokwim Delta Goose Management Plan, that we achieved some significant gains in many waterfowl populations.

The latest Protocol Amendments to the 1916 Convention Between the United Kingdom and the United States of America for the Protection of Migratory Birds in Canada and the United States has been signed. Several changes and improvements have been made. AVCP's Waterfowl Conservation Committee has been explicitly involved with international and domestic management decisions in the interest of conserving migratory birds. AVCP/WCC have been instrumental in influencing Native intent in the negotiations of the protocol amendments. The management program design mirrors the role WCC has played. It is important that the BLM recognize the future establishment of other regional Native organization management of migratory birds, as inferred by interpretations by the U.S. Delegation:

"Management bodies will be created to ensure an effective and meaningful role for indigenous inhabitants in the conservation of migratory birds,. . .[with] Native, Federal, and State representatives as equals, . . .Village councils shall be involved to the maximum extent possible in all aspects of management."
- Article II, sub-para 4.(b)(i)(ii) 001

We are aware that members of the Trustees for Alaska met with Secretary Babbit and John Lasche last week to discuss the NPRA lease process and the Secretary was alarmed to find that AVCP/WCC was not part of the consultative process. It is very unfortunate that the BLM felt it was not imperative that they consult with us on such an important issue. It is our hope that in the future, the BLM will consult with us, as other agencies within the Department of Interior go out of their way to accomplish goals.

003 AVCP/WWC finds that the DEIS fails to provide a description of the resources and ecological conditions, with population projections based on questionable statistical extrapolation rather than field data and known sampling protocols. If there is one thing we have learned in our fifteen year co-management process is we, at the very least, support field data and statistical documentation to follow harvest levels and population thresholds. Tuungh Fish and Wildlife biologists monitor our black brant when they leave their nesting area to molt in the North Slope, NPRA area, we have not had a collaborative management process similar to what we enjoy with other members of the Pacific Flyway Committee and Council. Intensive studies of brant habitat use, energetics and effects from disturbance conducted by the Service and university biologists during the late 1980's indicate the sensitive nature of these wetlands and their importance to the entire Pacific brant population. Therefore we have no assurance that seasonal interactions between our waterfowl and the habitat would be compatible with the potential impacts of oil and gas exploration and development in the area.

The Teshekpuk Lake Special Area provides essential molting habitat for significant populations of Pacific brant, greater white-fronted geese and Canada geese, all three species are prevalent in the Y-K Delta. The Teshekpuk Lake watershed provides habitat for many species of waterfowl aside from our obvious interests in the brant, including northern pintails, king eiders, tundra swans, and three species of loons—Pacific, red-throated, and the rare yellow-billed. The threatened Spectacled eiders have a high nesting preference in that area. Steller's eiders, another threatened species, has been recorded as a nesting species within the area.

004 The DEIS fails to describe thoroughly or in detail, the alternative potential transportation infrastructure associated with the various levels of development to be allowed in the northeastern NPR-A. The DEIS description is based upon an assumption that no major road networks will be built. More importantly, the limited restrictions can be changed without public notice. The BLM seems to have gone out of their way to understate the effects the infrastructure would sustain with oil field development in the northeast NPR-A. For example, it has been indicated that road and platform repairs would be done by the use of an aircraft, which would easily spook the molting geese. Alternative C seems to be the only indication in which BLM recognizes the impact on birds, the DEIS concludes that "[e]ffects of oil and gas activity are not expected to be significantly different than discussed for Alternative B." Similarly, under Alternative D the DEIS concludes that additional acreage leased "are expected to result in effects on bird populations that are somewhat increased from those discussed for Alternative B." AVCP/WCC finds that kind of analysis as irresponsible and trivial on an important resource for such a broad-based stakeholder issue. It would be prudent for the BLM to back up those assumptions with rigorous study as current waterfowl management plans demand.

We concur with the Pacific Flyway Council's February 17, 1998 letter to Secretary Babbitt that outlines our concerns regarding the leasing of certain portions of the Northeast Planning Area of NPR-A. We find that the Governor's position released today is not strong enough in his assertion that leasing in the Goose Molting

3

Management Area only be delayed. We most strongly urge the Governor of Alaska and the Secretary of the Interior to permanently protect the Teshekpuk Lake Special Area from future development.

We would appreciate your consideration to our concerns, and hope you realize that communication between our organizations would be valuable for future endeavors. Please contact myself at 907-543-7301 or Michelle Spurck from my Natural Resources Department at x 7342 if you need any more information.

Sincerely,
David O. David, Chairman

Myron P. Naneng, Sr.
President

cc: Chairman Stevens, Young and Murkowski
Secretary Babbitt, Department of the Interior
Governor Knowles
Pacific Flyway Council

DNR: mrs

1852-001
On May 12, 1998, the BLM held a subsistence hearing in Bethel to obtain comments on the IAP/EIS. Before that, the agency held workshops at Hooper Bay and Bethel to discuss local residents' concerns with the subsistence ramifications of the alternative plans offered in the draft IAP/EIS. Results of the hearing and information obtained from local residents during the workshops are included in the final IAP/EIS's impacts of the alternatives on subsistence.

1852-002
Please see Responses 1314-004 and 1450-001 for potential impacts on subsistence harvests in the Yukon-Kuskokwim Delta region.

1852-003
When such information is available, the seasonal distribution, estimated populations, densities, habitats and habitat preferences, site fidelity, breeding season behavior, and response to disturbance factors for specific bird groups and species are described. Because few species have been monitored (for other than distribution and density) for more than a few years, the impact analysis must rely on this type of data. Other information is taken into consideration in estimating potential effects to a species. However, a comprehensive review of the birds' biology is not appropriate in a NEPA document.

1852-004
The location and impacts of a future transportation infrastructure in the planning area are presented in general terms in the IAP/EIS, because the locations of oil fields that the infrastructure will serve are unknown. Site-specific environmental analysis will occur after discovery and prior to development of an oil field. We believe that no major road network will be developed in the planning area (please see Response 1851-011). Moreover, Preferred Alternative Stipulation 48 restricts road construction. Statements referenced in Sections IV.D.8 and IV.E.8 (Alternatives C and D) regarding the relatively minor potential increase of effects on molting geese populations under these alternatives as compared to Alternative B reflect that Alternatives C and D, while making additional areas available for oil and gas leasing, still would not lease the important goose-molting habitat. The areas made available under Alternatives C and D that are not available in Alternative B are not intensively used by geese.

1853

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March 12, 1998

NPR-A Planning Team
Bureau of Land Management
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222 West 7th Avenue
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Dear Planning Team:

Please accept these, our supplemental comments, in addition to the detailed comments we submitted with Trustees for Alaska, The Wilderness Society, et al. and our position letter which we submitted with the GrassRoots Environmental Effectiveness Network co-signed by 225 conservation organizations (attached).

The Northern Alaska Environmental Center empowers citizens to take an active role in protecting natural habitats and wild places in arctic and interior Alaska. Since 1971, the Northern Center has advocated for Arctic wilderness, wildlife, and traditional ways-of-life and represents 1,300 members.

The Northern Alaska Environmental Center has been an advocate for the responsible management of the National Petroleum Reserve in Alaska (the Reserve) for many years. In 1994, years before the current call for development of this little-known arctic environment, the Northern Alaska Environmental Center published "The National Petroleum Reserve-Alaska, Time to Change Its Destiny" by Larry Landry, Northern Center staff. In its introduction, the report states:

> Despite its unglamorous name, the NPR-A is a big, wild, wonderful piece of the Alaskan arctic. At 23 million acres--the size of Indiana--the NPR-A covers a broad array of arctic ecotypes. It stretches north from the spine of the Brooks Range across an extensive range of rolling foothills to a coastal plain dotted with millions of acres of pond and lake wetland complexes which run all the way to the bays, lagoons and river deltas of the Chukchi and Beaufort seas...the conservation community should start to think about the NPRA before BLM and corporate interests do that thinking for us.

Our members and colleagues responded to this urging, and public support for the wilderness and exceptional wildlife habitat in the Reserve has been growing ever since. Many of our members have traveled over the expansive foothills and through the rivers of the reserve. Roger Siglin, NAEC board member and former superintendent of Gates of the Arctic National Park, has said:

> The NPR-A is not the kind of country that stands up and hits you in the face like a Glen Canyon or a Rocky Mountain National Park. It's more subtle but just as grand. The feeling coming out of the Brooks Range and looking north is much like seeing the prairies spread out seemingly forever from the foothills of the Rockies, except your view is not interrupted by roads or cities. Add a thunderstorm or the warm evening light, and it's even more breathtaking.

What is most disturbing about the Reserve "planning" activity by the Bureau of Land Management (BLM) and the preparation of the draft Environmental Impact Statement (EIS) is the politicization of the processes required by the National Environmental Policy Act (NEPA). For example, the draft EIS lacks any reasonable cause for action, with the action being the document itself and BLM's proposed decision. The draft EIS considers the impact of oil leasing and development in the Reserve without identifying that Alaska Governor Tony Knowles asked the Administration to offer oil leasing in the Reserve as a political favor. Thus, the driving force behind this review is nothing more than partisan politics which is not an adequate reason for action under NEPA. The public has a need to know <u>why</u> is our federal government spending valuable time and resources undertaking this consideration, and this document does not provide this rationale which is the foundation for the undertaking of this environmental review. Clearly, the review is for the purpose of assessing the impacts of oil development in the planning area so it is fair to say that the draft EIS fails to provide any compelling justification for considering opening the planning area to oil development. 001

An additional example of the politicization of the process is the unnecessarily rushed pace of the study. Only months after Governor Knowles expressed interest in leasing these federal lands for oil development, BLM embarked on a whirlwind eighteen-month environmental impact study. The compressed review is timed to serve the interests of short-sighted, partisan politics and the reelection of one politician in particular, Governor Knowles, a Democrat. The vast majority of the public receive no benefit from this review at all and will only end up diminishing the enduring values of Arctic wilderness. Partisan favors are not legitimate reasons under NEPA to determine the fate of public lands that belong equally to every American citizen.

BLM has not demonstrated the national need for development of the potential petroleum resources in the Reserve at this time. When the Reserve was set aside by President Warren Harding in 1923, it was intended to be used for the benefit of the US Navy which had submarines which depended on petroleum fuel. Much has changed in the intervening 75 years. Today, the nation's naval submarine fleet is powered by nuclear reactors. Also, the public values of wilderness, wildlife, and traditional ways-of-life are better understood and vastly more precious because of their relative scarcity compared to the abundance of oil worldwide. When land management authority was transferred from the Navy to the BLM, the original intent remained intact.

The United States is experiencing an energy boom and Alaska is feeling the effects. North Slope crude prices are steadily falling. In less than four months, the price has plummeted $9.00 per barrel from $20.70 on November 13, 1997 to $11.70 on March 10, 1998. At the nation's gas pumps, prices are also falling and a gallon of gas costs less than a gallon of drinking water at the supermarket. According to the *New York Times*, when adjusted for inflation, gas prices are at an all time low (NYT, 3/9/98). Manufacturers are producing automobiles which are less fuel efficient than their predecessors and consumers are buying them. 001

It is in the nation's interest to save some of our last petroleum reserves for a day when we can use our non-renewable resources carefully and efficiently. Instead of blindly blazing forward with a development plan, we need to stop and consider the long-term consequences of our consumption patterns. In order to reduce global warming and ensure our long-term economic stability, the United States needs to develop a comprehensive national energy strategy which focuses on energy conservation, efficiency, and renewable sources. Without this comprehensive strategy, BLM cannot justify the public benefit of developing the Reserve at this time.

The rushed timeline has made it impossible for BLM to give adequate consideration to the affected environment and the special areas which need protection. Our scoping comments, dated April 4, 1997 predicted the outcome of this process when we wrote:

> The short time frame is overly ambitious and does not allow for adequate synthesis of already existing information, much less provide for time needed to gather new data where current information is insufficient. Eighteen months will allow the planning team to develop only a vague understanding of the natural values of these lands. It is doubtful that the BLM will even be able to determine sufficiently what is needed for a comprehensive Integrated Activities Plan.

We give credit to the dedicated employees of BLM, individuals like Anne Morkill in Fairbanks and Jim Ducker in Anchorage, who have worked diligently to be responsive to the public's needs and make the best out of an ill-fated situation. The best intentions, however, are far from adequate when considering the fate of 4.6 million acres of relatively untouched land. The draft EIS contains serious deficiencies which we doubt can be ameliorated in the few remaining months of the planning process.

The agency has described the administrative consideration of public and agency comments as complete with the publication of the final EIS. This means that draft EIS is the only document that the public and agencies can comment on where comments would be considered and taken into account in preparation of the final document and record of decision. However, this process means that the only opportunity for the public to review the agency's "preferred alternative" is in the final EIS. Although BLM is mandated to give the public and agencies a 30-day window to comments on the final EIS, any input provided during this window will not be considered by BLM and the only avenue for further consideration is to file an administrative appeal with the Interior Bureau of Land Appeals. Consequently, the public has not had a chance to accurately 002

assess and comment on BLM's plans because there is no specific action proposed in the draft EIS. 002

We believe the lack of a preferred alternative in the draft EIS violates the intent of NEPA. According to NEPA, "The Federal Government shall provide leadership in protecting and enhancing the quality of the Nation's environment..." Not providing the public and agencies with a proposed course of action is a failure to perform the leadership function required by NEPA and expected by the public and agencies. In order to conform to NEPA, we strongly recommend that BLM develop a preferred alternative for the draft EIS and engage in a second comment period to solicit comments on this specific proposal. Sound public policy decisions hinge on a fair and honest public involvement process. BLM has failed on this count. A second comment period on a preferred alternative will allow individuals to make a well-informed decision about the management of the Reserve and will demonstrate BLM's commitment to the public decision making process. 003

The draft EIS shows a strong bias toward oil and gas development. The simultaneous call for nominations of lease tracts while preparing the Reserve EIS illustrated the bias from the onset. The draft EIS confirms our earlier concerns (expressed in NAEC scoping comments, April 4, 1997.) Under NEPA, federal agencies are required to consider the full range of alternatives for a proposed project. BLM's alternatives as presented in the draft EIS, however, include four leasing alternatives and the "No Action" alternative, leaving out the entire other side of the continuum. The balance of alternatives for permanent wilderness protection, despite strong public input requesting their inclusion in this review, is left as an absolute void. There is no alternative which proposes permanent protection and no alternative which prohibits the placement of surface infrastructure such as roads and pipelines. The truncated review in the draft EIS leaves a vast hole in the required comprehensive assessment, and at best, identifies the review as merely a consideration of the impacts of oil development and no action in the 4.6 million acre planning area. Therefore, the draft EIS, as written, does not fulfill the requirements of NEPA or conform to the interests of the public to at the very least consider alternatives to permanently protect some or all of the planning area. In addition, the inadequacy of the draft EIS, as detailed in the Trustees comments, violates the purposes of NEPA which includes:

> ...the analysis of environmental factors at the earliest possible time so as to minimize adverse effects, preclude irreparable damage and permit an inquiry which is unimpeded by economic exigencies.

The full range of alternatives should include an equally wide range of conservation options to balance the range of development options. For example, the No Action alternative should include no action whatsoever--no additional protection designations as well as no leasing, seismic activity or surface occupancy such as roads or pipelines. The range of conservation alternatives should include consideration of permanent protection for the entire 4.6 million acres of the Reserve planning area. Between these two extremes, there is room for a well balanced, reasonable conservation alternative. In order to conform with NEPA and the public interest, BLM should develop a range of conservation alternatives to counter their development alternatives in the draft EIS.

The draft EIS provides no compelling reason for leasing in the Reserve, however, ample reasons point to an urgent need to move quickly to defend from any harmful impact the most recognized areas within the planning area. The Northern Center proposes a conservation alternative which promotes the permanent protection of the Teshekpuk Lake and Colville River Special Areas. The Secretary of the Interior should initiate a wilderness review of the entire 4.6 million area planning area and, pending the Secretary's decision, the Bureau of Land Management should manage these two areas as wilderness. 003

The Teshekpuk Lake Special Area should be granted permanent protection that prohibits all oil development facilities, roads, and surface occupancy. The Teshekpuk Lake area provides essential molting habitat for internationally significant populations of Pacific black brant, greater white-fronted geese, Canada geese, yellow billed loons, and spectacled and Steller's eiders. The area also contains the core calving grounds for the Teshekpuk caribou herd, numbering approximately 25,000 animals, which is an important subsistence resources for residents in the area.

The extraordinary qualities of the Teshekpuk Lake area have been heralded again and again by conservationists, biologists and agency officials. Congress recognized that the Teshekpuk Lake region deserved "maximum protection" in the 1976 Naval Petroleum Reserve Production Act. In 1977, Interior Department designated 1,734,000 acres as a Special Area. The primary reason for designation was to protect the unique waterfowl habitat. Oil leasing and drilling is incompatible and inconsistent with the intent of Congress in providing maximum protection for the migratory waterfowl habitat of Teshekpuk Lake. Leasing should be permanently prohibited in the Teshekpuk Lake area in order to provide maximum protection for the globally significant waterfowl habitat and subsistence resources. 004

Biologists have cited their concern for ill-planned development in the Teshekpuk Lake Special Area. Rod King has flown waterfowl surveys in the Arctic since 1977 and worked as a biologist for the US Fish & Wildlife Service for 30 years. He writes:

> In July 1996, US Fish & Wildlife Service counted 23,500 Pacific brant on lakes northeast of Teshekpuk Lake. About 22 percent of the world population of Pacific brant migrates to the coastal plain of the Reserve to feed and grow an entire new set of flight feathers. Chronic disturbance during this flightless period would prevent the brant from storing enough fat to migrate 6,000 miles south to winter in coastal lagoons along the Pacific coast of Baja, Mexico. Black brant seek out the most remote places for their entire life cycle and avoid developed areas. Almost all Pacific black brant used to winter in San Francisco Bay. Now they have moved their wintering grounds to remote bays farther south. I don't know what the brant will do or where they'll go if their summer nesting, molting and pre-migration staging areas are disturbed on the Arctic coastal plain.

And yet, not only are the qualities of this vital area understated in the document, but the proposed options for protecting the Teshekpuk Lake Special Area are woefully inadequate. We believe 005

that BLM's rationale for not considering areas in the Reserve for wilderness study is flawed and that the Secretary of the Interior has a responsibility to the public to conduct a formal review of the Reserve to consider possible congressional wilderness designations and the transfer of lands to the US Fish and Wildlife Service. In the time being, BLM should protect the surface resources of the Teshekpuk Lake Special Area by managing the entire area as wilderness. 005

Additionally, the Colville River should be permanently protected and no development activities, including surface occupancy, roads, or gravel removal, should be permitted. The Colville River Special Area is the largest river in Alaska which flows into the Arctic Ocean. The Colville and its tributaries provide vital habitat for moose (because of an uncommon density of willow on the river) brown bear, wolves, wolverines, and at least twenty species of anadromous and freshwater fish. The best-known feature of the Colville River is its extraordinary concentrations of songbirds and raptors, including the Arctic peregrine falcon, gyrfalcon and rough-legged hawk. In 1977, the Interior Department recognized the importance of this unique habitat area by designating 2.3 million acres of the Colville River as a Special Area. 006

Dr. Thomas Cade conducted research studies along the Colville River from 1952 to 1989 collecting information on raptors and their prey and is intimately familiar with the unmatched value of the river. According to Dr. Cade:

> The Colville River Special Area was originally designated to emphasize protection of the exceptional ecological community of arctic birds of prey—particularly the Peregrine Falcon—that nest on the cliffs and bluffs of the Colville River. ...the draft EIS does not covey anything close to an adequate evaluation of the truly unique and biological features of the reserve, particularly of the Colville River Special Area. (comments on draft NPRA EIS, 2/20/98)

Dr. Cade and other knowledgeable scientists have long recognized the Colville River as one of the most significant habitats for raptors in North America.

The draft EIS fails to consider the important ecological connections between different species in a given area. In the summer months, virtual every cliff along the Colville River hosts a pair of nesting raptors (peregrine, gyrfalcon, and rough-legged hawk). For example, the draft EIS provides no analysis of the effect that a decline in the ptarmigan population would have on the gyrfalcon population along the Colville or its tributaries. The Colville River holds a unique combination of prime nesting habitat and abundant prey. Gyrfalcons are primarily non-migratory if their prey (mostly ptarmigan) remains abundant. New roads to the Colville River would increase local access to hunting. The ptarmigan population could undergo increased hunting pressure from improved access. There are no prohibitions on road construction in the draft EIS. Further, there is no analysis given to the effect that local mortality of ptarmigan will have on their predators like the gyrfalcon. 007

The entire Colville River Special Area should be included for wilderness review. The Secretary of the Interior should consider the transfer of the management of the Special Area to the US Fish and Wildlife Service. In the mean time, BLM should manage the Colville River Special Area as wilderness and prohibit all roads, surface occupancy, permanent or seasonal construction and gravel facilities. 008

Thank you for this opportunity to comment. We look forward to reviewing the final Environmental Impact Statement and again suggest that the public be afforded an opportunity to review and comment on BLM's proposed action and have those comments considered in a supplemental document prepared prior to the release of the final record of decision.

Sincerely,

Sara Callaghan
Wilderness Campaign Coordinator

Enclosures

1853-001
Please refer to Sections I.A. and I.B.1 for the role of the NPR-A in the Nation's energy future and the purpose of the Reserve. Also, please see Response 1851-002.

1853-002
Please see Response 1851-054.

1853-003,4,5,6,8
Please see Responses 1851-054, -055, -056, and -058.

1853-007
The BLM does not expect activities discussed in the EIS to result in any significant new road construction. Stipulation 39 provides a ½-mile setback from the Colville River for roads and other permanent facilities. The BLM would have little control of local winter ptarmigan hunting, specifically where hunters are transported by snowmachine. Potential effects of excessive ptarmigan mortality on raptors including gyrfalcons is discussed in Section IV.H.8.d.

PAMELA A. MILLER

1854

March 12, 1998

Mr. Gene Terland
NPR-A Planning Team
Bureau of Land Management, Alaska Region
222 West 7th Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland:

I wish to submit the following comments on the Draft Integrated Activity Plan/ Draft Environmental Impact Statement (DEIS) for the northeast section of the National Petroleum Reserve-Alaska (NPR-A) released by the Bureau of Land Management on December 10, 1997.

I am very concerned about the fate of internationally significant wetlands, wildlands, fish and wildlife habitat and wild rivers in the planning area. New oil fields and pipelines are rapidly extending out from Prudhoe Bay -- to the east towards the Arctic National Wildlife Refuge and on the west to the National Petroleum Reserve-Alaska (NPR-A). This single-minded drive to develop all oil and gas resources in the Arctic could leave none of America's arctic outside the vast industrial network of oil and and gas fields.

There is no national need at this time to justify oil and gas leasing in the NPR-A. With at least 40 - 50 years of oil production still left in existing leases on Alaska's North Slope, there is no urgency to develop oil resources in the NPR-A today. There is no compelling need to tap our strategic energy reserves now, only to export them to China, Korea, or Japan at the expense of the wildlife, wild rivers, and wilderness in the NPR-A. 001

The Clinton Administration should proceed, instead, with an energy policy that makes the United States less reliant on oil through alternatives and efficiency, and reduces emissions of greenhouse gases.

The North Slope oil field discoveries already stretch 130 miles across State lands. Now they want more. The cumulative effects of expanding oil development across Alaska's arctic have not been comprehensively addressed. There should be no new leasing in NPR-A before this analysis is done.

The EIS downplays the existing North Slope oil field activities and infrastructure (such as only mentioning 141 miles of the 1,100 miles of existing pipelines and showing only some of the existing oil field roads) and their effects on wildlife habitat. The effects of currently proposed oil field developments, both onshore and offshore, are not considered in the "cumulative" case. 002 003

Therefore, this EIS continues the Prudhoe Bay tradition of piecemealing development decisions. 003

Key environmental impacts are underestimated. The DEIS underestimates the potential effects of oil exploration and development from disturbance, habitat degradation or loss, and pollution to fish and wildlife and their habitats. 004

The EIS assumptions (e.g. vague hypothetical development scenarios and use of the incomplete information about the Alpine oil field development) greatly downplay the potential industrial activities and construction needed for oil exploration and development in NPR-A-- and therefore the effects on wildlife, wild rivers, and wildlands. The DEIS assumes that major road networks won't be built: even though there are not strict stipulations to prohibit this, the effects of road networks or gravel mining needed for such roads, are not analyzed. 005

Pipelines crossing the Teshekpuk Lake Special Area would be allowed in all leasing alternatives despite risks to this internationally significant habitat. There would be degradation caused by construction and oil spills, both chronic and major. If there were no roads along the pipelines, summer response would be by helicopter-- extremely disturbing to the sensitive molting geese-- and frequent plane flights would be needed for leak surveillance. Allowing pipelines in the Teshekpuk Lake Special Area would increase demand for other oil field facilities. 006

The direct and cumulative effects from roads, staging areas, causeways, processing plants, and pipelines from offshore oil developments are reasonably foreseeable. Even though these threaten the internationally significant waterfowl habitats in the Teshekpuk Lake Special Area, they are not analyzed in the EIS.

The Stipulations have loopholes that make them virtually meaningless. Despite a long list of stipulations for the areas to be leased, only 7 are proposed to be lease-sale stipulations, and all of them have major loopholes allowing them to be waived or exempted. The basis of stipulations was that they must allow oil fields to be built, and there is no scientific evidence that they will be adequate in reducing impacts to an acceptable level. Once the property right of a lease is sold, it is extremely hard to hold firm on restrictions that would prevent drilling, development, or other industrial activities. Furthermore, oil companies should not be allowed to conduct the necessary caribou or migratory bird monitoring studies in NPR-A -- they should provide funding for the agencies to conduct studies. 007

Stipulations (even if strengthened) cannot substitute for the "maximum protection" legally required to protect the surface resources of Teshekpuk Lake, Colville River, and other special areas -- only no leasing can achieve that Congressional intent. Even if certain areas were not "available for leasing" in the first lease sale, there is no assurance that such acreage would not be added right back in later. In fact, there is no assurance that lands "unavailable for leasing", deferred, delayed, or deleted, would not later be added to the mix for a new lease sale -- even without a new EIS. 008

Permanent protection is needed for Teshekpuk Lake and Colville River Special Areas. 009

(with the addition of the Kogosukruk and Kikiakarok Rivers) prior to any consideration nf new leasing in NPR-A A new conservation alternative is needed because none of the DEIS alternatives provide adequate protection to fish and wildlife, rivers, or wildlands. We should not gamble with these internationally significant areas

The spectacular Colville River should be recommended for "Wild River" designation by Congress, but permanent protection is also needed for the entire special area. A new conservation alternative because none of the draft EIS alternatives provide adequate protection to fish and wildlife, rivers, or wildlands, nor provide proposals for permanent protection.

The two existing special areas, and other new ones that may be identified after thorough scientific review is complete, should be permanently protected. There should be no leasing, and they should be forever off-limits from any industrial activity. This includes seismic testing, oil drilling, gravel mines, production pads, docks, seawater treatment plants, roads, pipelines, airports or helicopter landing sites, and other oil and gas development facilities.

009

Finally, there has been new discussion of possible land exchanges to Arctic Slope Regional Corporation in the NPR-A, including in the planning area. I do not believe that such an exchange would be in the public interest. The Federal Treasury would lose its 50% share of all potential royalties. It is highly unlikely that the terms of the trade, either with respect to financial return to the public, or in terns of natural resources values would be of equal value. An instructive comparable example is the 1983 Chandler Lake exchange between the Department of the Interior and ASRC. The General Accounting Office found "it was not in the Government's best interest" (GAO/RCED-90-5) because the exchange values were not equal. It concluded that the Government undervalued the subsurface lands it relinquished by hundreds of millions of dollars and that a thorough review under NEPA was not conducted. Furthermore, the results of the earlier Chandler Lake exchange continue to threaten integrity of the Arctic National Wildlife Refuge because ASRC obtained key subsurface inholdings within valuable habitats. If such an exchange is considered by Interior, then a new scoping process for a Legislative Environmental Impact Statement would be needed.

010

In conclusion, I oppose leasing in the NPR-A at this time because I do not believe that it will contribute to our national energy needs nor take our nation in the right direction for solving the problem of global climate change.

I have attached five photographs that I took in the Colville River delta and near Ocean Point (attachments 1-5). I have spent much time over the past fifteen years as a biologist and conservationist in many areas of the Arctic coastal plain. This incredibly rich area is priceless--just as it is naturally. Wild, the freedom of the wind, the flocks of birds coming from 6 continents. The oil companies are waiting at the gate. There is absolutely no reason why they shouldn't wait longer. The public already knows that the wildlife values are worth more than the oil. Oil in the ground, in a Petroleum Reserve, is the right place for it.

I hope my pictures can bring an echo of the loon's song into the room where these comments are read.

Sincerely,

Pamela A. Miller

Pamela A. Miller

Attachements 1-4.

1854-001
For a discussion on the national interest in oil and gas leasing in the NPR-A, please refer to Section I.A. Also, please see Response 1851-002.

1854-002
Please see Response 1851-026.

1854-003
Please see Response 1851-025.

1854-004
The potential effects of disturbance, habitat degradation or loss, and pollution to fish and wildlife and their habitats from oil exploration and development have been analyzed. The BLM believes the estimates of the potential effects presented in the EIS are reasonable. This analysis is based on the information presented in Sections III and IV.A of the EIS. No specific criticism of this information was offered in the comment, nor was any explanation provided as to the reason the commenter thought the potential effects were underestimated. Without this information, we are unable to provide a more detailed response.

1854-005
The BLM is forced into generalized scenarios because the actual location and timing of new discoveries/development cannot be known with any reasonable certainty. Please see Responses 1851-011, -013, -038 and 1652-031. See Preferred Alternative Stipulation 48 for restrictions on permanent roads in the planning area.

1854-006
Although pipelines would be allowed in the Goose Molting LUEA, pipeline construction would be suspended during the intensive-use period (June 15-August 20, Stipulation 34) unless the FWS approves continued activity. Also, construction must avoid altering goose-feeding habitats along lakeshore margins identified by the FWS (Alternatives A-E, Stipulation 32). The BLM does not expect pipeline construction to cause significant habitat degradation. Transport of materials and much construction are expected to occur during winter. Although the site where an oil spill might occur is speculative, spilled oil is likely to remain localized (e.g., tundra and ponds or lakes in the immediate vicinity); therefore, response and cleanup will be confined to a relatively small area. Required oil-spill-contingency plans will address such aspects as stockpiling oil- spill-response equipment and response procedures. Should development occur, the location of facilities specified in a development plan will allow a precise oil spill-contingency plan to be formulated. Pipeline surveillance by aircraft may not be frequent (perhaps 1/week) because other methods for monitoring pipeline integrity would be in use (e.g., electronic leak detection and monitoring systems).

1854-007
In the Preferred Alternative, all stipulations will be attached to oil and gas leases. Exceptions to stipulations may be granted only if the stipulation is technically not feasible, economically prohibitive, or an environmentally preferable alternative is available *and* the objectives for which the stipulation is proposed can be fully satisfied through the alternative means proposed by the lessee. Before BLM could authorized such an exception, it also would consult with Federal, State, and NSB regulatory and resource agencies.

The BLM will oversee studies required of oil and gas lessees. The agency and a lessee could enter into a cooperative agreement by which the lessee funds BLM work on a study. However, BLM does not have the authority to require lessees to fund government activities.

1854-008
Congress did not intend that maximum protection preclude leasing. The NPRPA requires management "maximum protection" consistent with the purposes of the Act, which is to provide for the energy needs of the Nation. Moreover, House of Representatives managers of the legislation stated that "maximum protection of such surface values' is not a prohibition of exploration-related activities" within Special Areas: (*United States Code Congressional and Administrative News*, 94th Congress, 2d sess., 2:523).

In second and subsequent oil and gas sales, BLM would be able to lease only those lands identified as available for leasing in this IAP/EIS.

1854-009
Please see Response 1851-058.

1854-010
Currently, no exchange proposal is under consideration by the Department of the Interior or by BLM. As stated in Section II.G, lands in the planning area have been identified as desirable for retention. Any future exchange proposal would be analyzed at the time of submission and would have to be shown to be in the public interest.

1869

In Reply Refer To:
Mail Stop 423

MAR 16 1998

MEMORANDUM

To: Director, Bureau of Land Management

From: James F. Devine Signed
Senior Advisor for Science Applications

Subject: Review of the Draft Integrated Activity Plan/Environmental Impact Statement for the Northeast Corner of the National Petroleum Reserve-Alaska

As requested in your correspondence of November 19, 1997, the U.S. Geological Survey (USGS) has reviewed the subject draft integrated activity plan/environmental impact statement (IAP/EIS) and offers the following comments.

PART III—DESCRIPTION OF THE AFFECTED ENVIRONMENT.

The heart of this chapter is the oil and gas resource assessment (p. III-A-11); however, more details regarding the assessment would be helpful. In particular, there is no description of assessment methodology, no record of actual assessment input, no rationale for how input was established, and no description of how input was used to calculate results. References are made to two recent Minerals Management Service (MMS) publications (USDOI, MMS, 1996d and Sherwood, Craig, and Cooke, 1996), but those publications do not provide explanations of the computational aspects of the methodology. 001

The answers to the following questions regarding the assessment methodology would improve the IAP/EIS: How does the computer assessment program work and what efforts were made to constrain the results in terms of the prevailing geological understanding of the area? Was there an independent geological assessment made or did the computer generated output constitute the geological assessment? What were the results of the geological assessment? What constituted the basic information of the geologic assessment? 002

The assessment methodology applied by MMS/BLM is based on a Canadian model that fills in a distribution of oil discoveries. Does the methodology used in this assessment incorporate drilling data from both successful and unsuccessful tests? How were the numerous dry holes that have been drilled in NPRA considered in this assessment? 003

A part of output assessment that can be used to evaluate the soundness of the methodology and to address economic considerations is the undiscovered accumulation size distribution. We found no evidence that such distributions were used for the planning area. What is the 004

undiscovered field size distribution for this area? How does it compare to the historical field size distributions for the area and for areas just to the east of the Planning area? Is the area to the east a reasonable analogue?

In testing various assessment methodologies on well constrained, international data sets, the USGS has found that the Canadian methodology (PETRIMES) yields exceedingly large results compared to several other methodologies. Did the MMS/BLM assessment team try alternative methodologies and compare results? What tests or calibrations of the methodology can be cited to provide confidence that the results are reasonable? 005

For the economic assessment (p. III-A-24), no details are provided regarding cost information or basic data such as production well productivity, cost facilities, pipeline layout, drilling, or network to get to Trans-Alaska Pipeline System (TAPS) from the fields. These costs are essential to evaluate the validity of the analysis. What was the source of the onshore facilities and drilling information? What constituted the geologic information that was in the economic component of the assessment, field sizes, depths of discoveries, whether fields were oil or gas? No intermediate results are given to judge the validity of the final economic analysis. What were the minimum economic field sizes? Did they vary with play characteristics, accumulation depth, and distance to the Trans-Alaska Pipeline? 006

The lack of documentation regarding methodology deprives the audience of the assumptions, risk evaluation, basic geologic information, and sources of information (reference citations are very limited or missing). Most importantly, it precludes an objective evaluation of the process to estimate resources and, therefore, the validity of the results. 007

The following are suggestions for clarification and/or enhancement of the report. 008

Page III-A-1, (b)

A reference or other documentation for the statement, "Three deposits of bentonite clay are located in the Umiat quadrangle..." is needed here.

Page III-A-1

The report lists mineral potential, clay potential, uranium potential, and coal potential, but does not mention industrial minerals, such as barite, even though it points out the usefulness of bentonite clay in drilling muds.

Page III-A-2, column 1, paragraph 5

"New stratigraphic play concepts for the Jurassic system..." are not altogether new and were recognized in part in the original USGS NPRA work described in Gryc (1988). These include the Simpson sand and unnamed sands in the South Meade and Kokuktak wells. Several other prospective sandstone reservoir units in the 'Beaufortian' Early Cretaceous part of the Kingak 009

Shale and overlying the LCU (in Tunalik, Walakpa, Ikpikpuk, Foran, etc.) were also identified earlier. These were all considered in the USGS 1995 assessment of the northern Alaska area. 009

Page III-A-2, column 2 (second paragraph from bottom) 010

The statement that "Numerous oil and gas shows were reported, but no commercial fields were discovered." is inconsistent with the discussion two paragraphs before about oil and gas discoveries made by the Navy (which were not commercial either). Mention should be made of the discovery of the East Barrow and Walakpa gas fields during second phase exploration. They have been producing for the benefit of the population of Barrow.

Page III-A-7, column 1, paragraph 2 011

References should include Grye, G., ed., 1988, USGS PP 1399, or the separate chapters in the Geologic Framework section within it by Grantz, et al; Kirschner & Rycerski; and Bird.

Page III-A-7, column 2, paragraph 3 012

Include Tarn in list of fields. It is mentioned in the next paragraph.

Page III-A-12, column 1, paragraph 4 013

Include timing among the play attributes, unless it is implicit in hydrocarbon source in the definition of geologic plays.

Page III-A-12, column 2, paragraph 3 014

Eleven plays, not seven, were assessed in the 1995 USGS assessment of northern Alaska.

Page III-A-12, column 2, paragraph 4 015

"Further play groupings..." suggests that these are in addition to the 14 plays cited. We recommend that it read "Play groupings were also based..."

Page III-A-13, column 1, paragraph 1 016

"Ellesmerian and Beaufortian rocks above this ridge....compared to sediments deposited to the south." is ambiguous in the sense that the reader is not sure that it refers to rocks overlying the ridge, or north of the ridge.

Page III-A-13, column 1, paragraph 4 017

Minimum depth of Play 1 should be more like 8500 ft rather than 6000 ft. Play 2 minimum depth looks too shallow.

Page III-A-13, column 2, paragraph 2 018

The name of Play 3 is not shown on the play map.

Page III-A-13, column 2, paragraph 3 019

"Fish Creek platform" is not shown or identified on the map (Fig. III.A.1.a(3)-2)

Page III-A-15, map 020

In caption, THRUST BELT is not shown nor is Lisburne well.

Page III-A-18, map 021

Is the northern part of the map set off by a heavy black line and designated "Kuparuk and Kingak formations absent" part of the Beaufortian Play or not? Why is Alpine on the map listed at 300 MMBO and in the caption at 365?

Page III-A-20, column 1, paragraph 1 & 3 022

Molenaar, Bird, and Collett, 1988 should be 1986. (see also column 2, paragraph 2 for same).

Page III-A-20, column 1, paragraph 2 023

Inconsistent labeling. Remove parentheses from Brookian (Turbidites)-Gas Belt play and show with same title on map on p. 21.

Page III-A-20, column 2, paragraph 1 024

Mention should be made of both the Fish Creek and Simpson oil accumulations and seeps when discussing the Brookian Topset play and point out the really big oil in this play just 30 miles to the east in West Sak & Ugnu fields.

Page III-A-20, column 2, paragraph 3 025

Comparisons offered before the results of this assessment have been presented seem to be out of order. We suggest you present your findings first and then show the reader how they compare to previous work. Under "previous work" you seem to be considering only the 1995 assessment. Given the long history of resource assessment in NPRA, some explanation of why that restricted view is taken should be included.

Page III-A-20, column 2, paragraph 4 026

As you have observed, thermal maturity data and maps in Johnsson et al. suggest the possibility for oil in plays south of the Barrow Arch. In the 1995 USGS assessment, the preponderance of gas as the dominant hydrocarbon show in exploratory tests south of the arch lead the USGS to designate those as gas plays. If you cite vitrinite reflectance data as (indirect) evidence of potential hydrocarbon state, it seems you also should cite the (direct) evidence provided by hydrocarbon shows.

Page III-A-22, column 1, paragraph 2 027

The statement that "The 1995 USGS assessment did not assign any particular importance to the Beaufortian play" is inaccurate. The 1995 assessment clearly assigned importance to the Beaufortian play and specifically identified Jurassic reservoirs as likely for oil accumulations. In fact, the USGS 1995 assessment results carry that play as the second most important play in the region with an estimated mean of 1,584 mmbo of technically recoverable oil and natural gas liquids with field sizes estimated to range up to 500 mmbo (F5).

Page III-A-22, column 1, paragraph 3 028

This paragraph is a misleading comparison of estimates; the estimates of USGS Topset and Turbidite plays are for the entire North Slope, whereas the estimates reported in this draft report are for the tiny part of the North Slope represented by the study area within NPRA. Furthermore, Attanasi and Bird (1996, open-file 95-75I) report that resources within these plays are not believed to be uniformly distributed. Rather, undiscovered resources are estimated to be greatest in the eastern parts and least in the western (NPRA) parts of these plays.

Page III-A-23, column 2, paragraph 1 and p. 24 Fig III.A.1.a(3)-7 029

Reporting the sum of oil and gas as BOE when gas currently has no economic value, and has very different economic and technologic constraints for development compared to oil, seems misleading. The actual energy equivalency used for the conversion of gas is not presented in either the narrative or the figure.

Page III-A-25, column 2, paragraph 2 030

Under the heading "Economic modeling approach" one finds a comparison of "key" differences between this report and the USGS assessment before the results are presented.

Page III-A-26, column 1, paragraph 2 031

The assertion that, "The USGS approach relies more on analogs than actual prospect mapping." is incorrect. Ordinarily it is true, but in the case of NPRA assessments, our method relied equally as much as MMS/BLM on prospect mapping. That information was carried forward

into the 1995 assessment of northern Alaska. Both methods rely on analogs for unmapped accumulations.

Page III-A-31, column 1, paragraph 2 032

The statement that direct comparisons between this assessment and the 1995 USGS assessment are impossible does not prevent comparisons being made. In spite of all the uncertainties inherent in oil and gas assessments and economic analyses, emphasizing that the mean economic resource at $18/bbl is 23% higher in this assessment than in 1995, seems pointless. A 23% difference between results derived by different methodologies represents pretty good agreement given the state of the science. MMS reported changes in the Alaskan offshore of 20% for oil and 109% for gas between 1989 and 1995 using basically the same methodology.

Page III-A-31, column 2, paragraph 4

After "...<1,000 ft. in elevation" add "and covered by thin eolian sands.

Page III-A-31, column 2, paragraph 4 033

It should be noted that ice wedges do not melt each summer and freeze again the following winter. The continuous presence of permafrost creates a permanent potential problem. If anything exposes the frozen soil causing it to thaw, severe slumping becomes a problem to travel and working with machinery in the area. Areas that have seemed stable for many years because they are firm when perennially frozen, can become vehicle traps if exposed to anything that causes more heating of the earth. See Ferrians, I.O. Jr. et. al., USGS Professional Paper 678, Permafrost and Related Engineering Problems in Alaska.

Page III-A-35, column 1, paragraph 3 034

The section on Sand and Gravel does not include all the relevant information available. The following information is offered to make the section more comprehensive.

The area is covered with a thin veneer of eolian sand. Gravels are also found specifically in flood plains and low terraces.

Sand with ice can slump, collapse, and/or liquefy.

Page III-A-35, column 1 035

After paragraph 4.....The addition of the following paragraphs could enhance this section.

Unconsolidated deposits of marine, fluvial, eolian, colluvial, upland sand and silt, and lacustrine origin mantle bedrock in the planning area. Alluvium, which consists of deposits of fine to medium sand, silty sand, gravel and gravelly sand is probably no more than 5 m thick along

modern channels and includes flood plain and alluvial terrace deposits as much as 8 m above modern streams. Terrace drainage is generally poor and subject to flooding to 6 or 8 m above low water at some streams. Permafrost underlies the alluvium except for a 2- to 6-m thick unfrozen layer beneath the larger channels and lakes. Point bar and channel deposits with less than 6 percent silt are generally not frost susceptible. The material provides good foundations in channel and bar areas where alluvium consists of medium to coarse sand, gravelly sand and gravel. Areas with low silt content may be suitable for fill. Excavation of stream-bed materials may pose environmental problems.

Marine silt and sand is perennially frozen beneath an active layer that is generally less than 0.5m thick. Active ice wedges are well developed and fossil ice wedges locally occur at depths of a few meters. In these sediments ice wedges are well developed and interstitial ice content is high. Interstitial ice content in excess of natural voids will produce settlement upon thawing. Similar deposits near Barrow are supersaturated with ice down to about 6 to 8 m with ice content of 75% by volume at a depth of 1 m, exclusive of wedge ice. The sediments are highly frost susceptible and are not suitable for foundations because of excessive differential settlement of ice-rich permafrost with the silt having a high liquefaction potential when thawed. Sand may be suitable for fill, base source, or surfacing if silt content is low and if stabilized by vegetation to prevent deflation.

Eolian sand ranges in thickness from a few m to more than 30 m on the Arctic Coastal Plain. The eolian sand forms the eastern edge of a large sand sea. Eolian sand is underline by permafrost. The sand is adequate for natural foundations but requires stabilization for use as a surface material or fill. The material is relatively easy to excavate with a ripper on well drained dune ridges. The eolian sand is very sensitive to surface disturbances. Locally, sand may be liquefiable when thawed and saturated.

Upland sand and silt occurs throughout the southern portion (Arctic Foothills Province) study area and ranges from a few m to as much as 20 m thick. Predominantly wind blown very fine sand and silt includes some clay and layers and lenses of chert granules and pebbles. Ice wedges are well developed and sediment may contain a high volume of interstitial ice. The material is not suitable for use except as binder material. The material is not suitable for foundations because of excessive differential settlement when ice-rich permafrost thaws. Locally the deposits may be liquefiable when thawed and saturated. (Carter, 1983, (Teshekpuk quadrangle); Carter and Galloway, 1985, (Harrison Bay quadrangle); Carter and Galloway 1986, (Umiat quadrangle); and Carter and Galloway, 1988, (Ikpikpuk River quadrangle)).

035

Page III-A-35, column 1, paragraph 6

036

A sentence explaining what this NPRPA legislation says about sand and gravel resources would be helpful.

Page III-A-35, column 2, paragraph 3

037

This sentence could be added after "...ice pads, and roads." to the paragraph, "The latter part of the NPR-A exploration program used reduced gravel in conjunction with insulation in pads, and ice reinforced silt pads, and ice roads and airstrips (Kachadoorian, Reuben, and Crory, 1988)."

Page III-A-35, column 2, paragraph 3

038

What types of changes is CRRL monitoring? What are the results of this monitoring?

Page III-A-35, column 2, paragraph 4

039

"...important for fishery needs to disturb." A reference is needed.

Page III-A-35, column 2, paragraph 4

040

Add these two sentences to the beginning of the paragraph to highlight the needs and uses of sand and gravel. "Generally, the high cost of obtaining aggregates (sand and gravel) in the Arctic make them useful for permanent facilities where other less expensive options such as ice techniques can be used for temporary or seasonal needs. The trade-off between the use of local materials with enhancements over transportation of sand and gravel over any distance over construction with ice is an economic decision."

Page III-A-35, column 2, paragraph 4

041

The following sentences should be added to the end of this paragraph. "If material is removed from ridges or hillsides, debris flows and thawing of ice-rich materials becomes an environmental consideration. Development of gravel roads on the Arctic Coastal Plain may impact wildlife habitat. A good understanding of road-tundra interactions and well-devised mitigative measures are required to minimize future impacts."

Page III-A-35, column 2, paragraph 5

042

Add this statement after paragraph 5. "All of NPR-A is underlain by permafrost, thus all of the engineering and geotechnical problems associated with excavation of sand and gravel and its use in construction have the potential of disturbing the thermal regime of the ground surface thus affecting the environment."

Page III-A-35, column 2, paragraph 6

043

The entire Paleontological Resources section contains many inaccuracies. Additional work by a paleontologist is needed before this section is credible.

044

Page III-A-38, column 2, paragraph 5

The "one well" should be identified as: ARCO, Brontosaurus-1. Also, the location of this well does not appear to be shown on any of the maps.

The following is a list of literature references containing additional information related to this FIS.

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Carter, L.D., 1983, Engineering-geologic maps of northern Alaska: Teshekpuk quadrangle: U.S. Geological Survey Open-File Report 83-634, scale 1:250,000, 2 sheets. Carter, L.D., and Galloway, J.P., 1985, Engineering-geologic maps of northern Alaska, Harrison Bay quadrangle: U.S. Geological Survey Open-File Report 85-256, 48 p., scale 1:250,000, 2 sheets. Carter, L.D., and Galloway, J.P., 1986, Engineering-geologic maps of northern Alaska, Umiat quadrangle: U.S. Geological Survey Open-File Report 86-335, 17 p., scale 1:250,000, 2 sheets. Carter, L.D., and Galloway, J.P., 1988, Engineering-geologic maps of northern Alaska, Ikpikpuk River quadrangle: U.S. Geological Survey Open-File Report 88-375, 19 p., scale 1:250,000, 2 sheets. Hemming, C.R., Scannell, P.K., and Winters, J.F., 1989, Limnological and fisheries investigations of flooded North Slope gravel mine sites, 1988: Alaska Department of Fish and Game, Habitat Division, Technical report no. 89-1, 60 p. Joyce, M.R., Rundquist, L.A., and Moulton, L.L., 1980, Gravel removal guidelines manual for arctic and subarctic floodplains: U.S. Department of the Interior, U.S. Fish and Wildlife Service, Water Resource Analysis Project, Office of Biological Services, 169 p. Kachadoorian, Reuben and Crory, F.E., 1988, Engineering geology studies in the National Petroleum Reserve in Alaska in Gryc, George, ed., Geology and Exploration of the National Petroleum Reserve in Alaska, 1974 to 1982, U.S. Geological Survey Professional Paper 1399, 940 p, various plates. LaBelle, J.C., 1976, Fill materials between Barrow and Colville River, northern Alaska: University of Alaska, Institute of Marine Science, Occasional Publication 4, p. 161-172. McKendrick, J.D, Scoroup, P.C., Ficcus, W.E., and Turner, Gwendo-Lyn, 1992, Gravel vegetation experiments - Alaska North Slope: Agroborealis, v. 24, no. 1 (Jan.) p. 25+. McLean, R.F., 1993, North Slope gravel pit performance guidelines: Alaska Department of Fish and Game, Habitat and Restoration Division, Technical report 93-9 (various pagings). Williams, J.R., Yeend, Warren, Carter, L.D., and Hamilton, T.D., 1977, Preliminary surficial deposits map of National Petroleum Reserve - Alaska: U.S. Geological Survey Open-File Report 77-868, scale 1:500,000, 2 sheets. Galloway, J.P. and Carter, L.D., 1997, A selected bibliography of sand and gravel resources, Arctic Coastal Plain, Alaska: U.S. Geological Survey Open-File Report 97-702, 12 p.

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USGS:WRD:OI:EAP:DMINNICH:PHELMS:bcox:02/26/98:ext. 6832
/home/eap/bcox/EAP.COMMENTS/ER/NATL_PETROLEUM_RESERVE-AK

1869-001
We agree that a more detailed description of the petroleum resource assessment methodology might be helpful for certain segments of the draft IAP/EIS audience. However, this assessment was published in an abbreviated fashion so that it would be understood by a broader audience of nontechnical readers. The draft IAP/EIS fundamentally is a land use planning document, and the focus of the text is environmental impact analysis. A comprehensive treatment of the geologic assessment is inconsistent with the scope and format of this NEPA document.

1869-002
The methodology and computational models used in the 1997 assessment of the planning area previously were used in the joint MMS/USGS National Resource Assessment completed in 1995. Numerous discussions and peer-review opportunities during this joint agency effort covered MMS assessment concepts and computer models. Additional written summaries of MMS modeling methodology can be found in a series of MMS OCS Reports including MMS 96-0034, MMS 96-0047, and MMS 97-0019.

Regarding more specific questions:

- The sizes of hypothetical, undiscovered fields obtained by the computer modeling were checked to be consistent with the sizes of recent discoveries within and near the NPR-A.
- An independent geological assessment preceded the economic assessment. Output results as undiscovered pool sizes were used as input to the economic model, which simulated development of individual fields within a broader framework of shared infrastructure. Economic modeling inputs, such as well-performance parameters, were tuned to reservoir properties used by the geologic model.
- Oil and gas resources resulting from the geologic assessment of all 14 plays were reported in Table III.A.1a(3)-1.

1869-003
Our planning area assessment used a subjective modeling methodology designed for partially tested frontier provinces. The Canadian model referenced in the USGS comments is another computer program that is designed for mature provinces and requires many discoveries to be statistically meaningful. Northern Alaska does not have enough discoveries/fields to accurately apply the Canadian "discovery model."

Well data were used for reservoir information and indicators of success at the play level. The discovery of hydrocarbons producible to a well bore was taken to indicate that the play contains pooled hydrocarbons. Accordingly, a chance of success equals 100 percent in the sense that hydrocarbons had been successfully generated, migrated, and trapped within a reservoir. A number of the NPRA "dry holes" actually discovered minor quantities of extractable oil or gas, as indicated by both formation evaluation and direct downhole testing. Prospects drilled and found to be barren were dropped from the probability distributions for prospect numbers.

1869-004
Distributions for the size and number of undiscovered oil and gas accumulations were calculated for all plays by the GRASP computer model. These accumulation sizes formed the basic input data for the economic modeling by the PRESTO computer model. This methodology was explained in the IAP/DEIS text. Pool rank plots for each of the 14 plays were not included in the draft IAP/EIS but are available to interested parties. Table III.A.1.a(3)-1 has been modified to include maximum pool numbers and the six largest oil pool volumes for each play. Our pool size distributions are consistent with the sizes of fields discovered in Northern Alaska with the exceptions of the Prudhoe Bay, Kuparuk River, and West Sak oil fields, which we do not consider representative of the geology in the Northeast NPR-A Planning Area.

1869-005
Any assessment model requires a critical analysis of preliminary results to ensure consistency with the known geologic framework and existing data. Our assessment program (GRASP) borrows some code from PETRIMES but differs from PETRIMES in several aspects. We have found that the assumption of lognormality that is the fundamental basis for PETRIMES can produce unrealistic results at the extremes of distributions. Although some input data in our computer model are approximately lognormal (oil and gas yields, for example), the final aggregations for play resources and pool sizes are done by a Monte Carlo method, which includes some limits to constrain the output distributions. Differences at the mean (or average) value should be minor between aggregation models with comparable inputs.

1869-006
Cost information is used by MMS for both resource assessments and lease-sale tract evaluation. Data assembled from a variety of public and proprietary studies is reviewed before each resource assessment or lease sale. To protect both the confidentiality of our sources and agency bid adequacy procedures, MMS does not disclose specific cost data in public documents. Proprietary cost and engineering information was discussed with the USGS to assist in their 1995 National Assessment effort of northern Alaska (Attanasi and Bird, 1995).

With respect to minimum economic field sizes (MEFS), MMS has largely abandoned the concept of MEFS as a screen in economic analysis and replaced it with a full, prospect-specific discounted cash-flow analysis. Other variables, besides volume, play larger roles in affecting economic viability. For example, well productivity (flow rates) or field location (proximity to infrastructure) have significant effects on commercial viability. Timing aspects also are very important. Ultimate reserve estimates typically increase with developmental experience and technology, leading to "reserve growth" in fields. The spread of infrastructure can make remote accumulations commercially attractive as satellite fields, which were bypassed less than a decade ago. To account for field location, distance factors (which increase cost) were built into the cost matrices used in the prospect development simulations. Well productivity and timing uncertainties are built into the simulation model using ranged distributions. We feel prospect-specific simulation is a more accurate method of economic assessment than employing generalized minimum field sizes.

1869-007
As stated in earlier comments, the draft IAP/EIS is not viewed as the proper forum for a comprehensive discussion of resource assessment methodology. We agree that without this information an objective evaluation of the results is difficult. However, we strongly disagree that failing to report all data calls into question the validity of the results. After all, this is a subjective assessment of undiscovered resources derived from probability distributions of several uncertain variables. Changing data and subjective concepts will result in different resource estimates. The "right answer" will remain unknown for decades, if it ever is known. In fact, there is reasonable convergence in mean resource estimates between the 1995 USGS estimates (scaled into the Northeast NPR-A Planning Area) and the current MMS/BLM assessment, despite the different personnel, conceptual methods, and computer models used. Although the precise volume of undiscovered oil can be debated, the goal of the assessment was achieved: to develop a reasonable value of undiscovered resources that could be leased, explored, developed, and produced as a result of a sale, so that potential effects can be analyzed.

1869-008
The three bentonite clay deposits have been referenced to the U.S. Bureau of Mines (1995). Barite was not discussed in this EIS because there are no identified barite deposits located within the planning area. There are identified barite deposits within the NPR-A, but they are located in the Cutaway Basin, the Ipnavik River drainage, and the Cula Creek drainage. These locations are located to the west of the Northeast NPR-A Planning Area.

1869-009
In the referenced paragraph we were noting that recent discoveries of oil at Alpine field and other accumulations in the Colville delta, which were announced after the 1995 USGS assessment, provided the basis for a more optimistic assessment of "Beaufortian" plays in the Northeast NPR-A Planning Area as

compared to previous assessments. The reservoir stratigraphy for Jurassic sandstones encountered in the USGS/Husky drilling program (completed in the early 1980s) is not particularly relevant to the new exploration play revealed by the Alpine discovery (announced in 1996). Resource assessments typically evolve with changing data and new geologic concepts without disparaging the work of previous assessments.

One major change in our study relative to the 1995 USGS assessment study is the amount of undiscovered oil resources estimated for the Beaufortian and older play sequences south of the Barrow Arch. Although similar plays were defined in both studies, the 1995 USGS assessment asserts that these plays offer largely gas potential. Our study indicates that a sizeable fraction (22%) of the entire undiscovered oil potential in the planning area occurs within these plays. Resource assessments typically evolve with changing data and new concepts without necessarily disparaging the work or previous investigations.

1869-010
Comments about the East Barrow and Walakpa gas fields is incorporated into Section III.A.1.a.(2)(a)1). However, neither field should be considered commercial in a strict sense. That is, these small gas fields would not be capable of profitably producing hydrocarbons for sale to a general market. These fields were initially developed and produced through government subsidies to provide fuel for the nearby community of Barrow. We believe it is accurate to state that no commercial oil or gas fields have been discovered in the NPR-A to date.

1869-011
The references listed are broad, regional studies of tectonics and geologic history. The additional references suggested by USGS are more narrow in focus, pertaining largely to the NPR-A. Therefore, most of the suggestions are not appropriate for inclusion at this place in the text. Note that most of these references have been cited elsewhere (in the Oil and Gas Resource Assessment section). We will include Kirschner and Rycerski (1988) because it is of broader scope.

1869-012
We have added Tarn to the list of Brookian-turbidite fields.

1869-013
We have revised the text to read "hydrocarbon source, and migration/charging history."

1869-014
Ten of the 11, 1995 USGS plays actually extend into the Northeast NPR-A Planning Area.

1869-015
The text has been revised to read "Play groupings were also based on. . . ."

1869-016
The text has been revised to read "Generally, Ellesmerian and Beaufortian rocks overlying and north of this ridge. . . ."

1869-017
A correction regarding play 1 has been made in Section III.A.1.a (3)(a)2). The minimum depth for play 2 is correct. It was achieved near southeast part of Dease Inlet (see Bird, 1988b, Fig. 16.3).

1869-018
Map names have been amended to coordinate with text.

1869-019
The words "along the Fish Creek platform" have been deleted from the text.

1869-020
The Lisburne well and "thrust belt" play, as defined by the USGS, lie outside of the map area.

1869-021
The referenced area is part of the Beaufortian play and only the Pebble shale and associated unconformity sandstones are present. "[Pebble Shale Present]" has been added to the map. The Alpine reserves have been changed to 365 mmbo on all of the play maps.

1869-022
The correction has been made.

1869-023
The map was incorrectly labeled during redrafting of the original figure. The figure (III.A.1.a(3)-5) has been revised.

1869-024
The last sentence has been deleted and the following has been added to the end of the paragraph:

Migrating oil is diverted by this shale barrier north towards Barrow Arch. Over most of the play area, this barrier to vertical migration may be the chief threat to the charging of shallower prospects within this play.

Shallow oil fields in Nanushuk sandstones were found in the Fish Creek and Simpson fields. Fish Creek field was discovered by the Navy drilling program near a surface oil seep, although the volume of the oil pool is unknown. At Simpson field, also discovered by the early drilling program near seeps, Nanushuk sandstones are charged with oil (roughly estimated at 12 mmbo recoverable). Over the majority of the play area, the Brookian topset sequence is virtually structureless, and any traps probably consist of discontinuous sandstone bodies isolated within shales. Play concepts for such traps might include lowstand wedges or prograding complexes isolated beneath shales that onlap a younger flooding surface. Play 11 has been penetrated by 23 or more wells in the NPR-A, with oil discoveries at Simpson and Fish Creek and a gas show in the East Topogoruk well.

One of the largest oil deposits in Northern Alaska, perhaps as much as 40 billion barrels inplace, occurs within Brookian topset sandstones in the West Sak and Ugnu accumulations overlying Kuparuk field just 15 to 30 mi east of the NPR-A. No accumulations of this size are anticipated within Brookian sandstones within the Northeast NPR-A Planning Area.

1869-025
A comprehensive comparison to all previous assessments published for NPR-A (mostly done by the USGS) is beyond the scope of this draft IAP/EIS. Some comparisons to the 1995 USGS assessment are relevant because one could assume that the most recent 1995 USGS assessment included insights from previous USGS assessments. Although we recognize several modeling differences between the current MMS/BLM and past USGS assessments, the direct comparisons discussed in the draft EIS were largely eliminated in the final EIS.

1869-026
As the USGS comments note, wells south of the "Barrow Arch" plays encountered numerous gas shows. However, two oil fields (Umiat and Fish Creek) also were discovered in the NPR-A, and the newly discovered Alpine field lies along the south margin of the USGS "Barrow Arch" plays. Noting that minor oil shows and residual oil stains commonly occur with gas shows in the wells south of the USGS "Barrow Arch" plays, we examined the thermal conditions of the deeply buried rocks and found that the preservation of oil theoretically was possible over large areas thought to have only gas potential by the 1995 USGS assessment. To acknowledge the potential for oil pools in our model, probabilities and proportional mixtures were used to define oil/gas volumes in the Arctic Platform plays. The geologic model for the Northeast

NPR-A Planning Area provides for highest probabilities for oil fields in the "Barrow Arch" plays (O/G= ~76/24) and distinctly lower probabilities for oil fields in the "Arctic Platform" plays (Endicott, O/G= ~35/65; Lisburne, O/G= ~55/45; Sadlerochit, O/G= ~62/38; Beaufortian, O/G= ~73/27). This methodology takes into account the gas and oil shows (as noted by the USGS commenter) while recognizing northerly migrations of oil to different stratigraphic levels from potential oil source rocks.

1869-027
We agree that this paragraph poorly characterizes the 1995 USGS assessment. The USGS legitimately points out that their Beaufortian play was an important contributor in their 1995 assessment. Our main point is that the Alpine discovery created even more optimism about the Beaufortian plays in the NE NPR-A Planning Area.

1869-028
Direct comparisons to previous assessments generally have been eliminated in the final EIS text. Our main point in this paragraph is that, relative to deeper Sadlerochit and Beaufortian plays, relatively minor oil resources (7% of the total) will be associated with the Brookian turbidite or topset plays. The largest pools in either Brookian play averages <40 mmbo. No accumulations of the scale of the large West Sak-Ugnu pools (tens of billions of barrels in-place) are anticipated to occur in these plays in the Northeast NPR-A Planning Area.

1869-029
The BOE presentation format is useful to some segments of our audience for making comparisons to areas outside Alaska; therefore, it is MMS's convention to offer a BOE category for resource aggregations. A separate portrayal of oil and gas would be more relevant to those familiar with petroleum development in arctic Alaska, where developmental aspects of oil and gas are different. We believe BOE is an appropriate unit in reporting geologic (or conventionally recoverable) resources but has little meaning with respect to reporting economically recoverable resources. To the caption in Figure III.A.1.a(3)-7 the following has been added:

"BOE represents a summation of oil and gas resources on an energy-equivalent basis, where 5,620 cubic feet of gas is presumed equal to 1 barrel of oil."

1869-030
It seems reasonable to discuss the key differences in modeling concepts before examining the assessment results. Direct comparisons between the present and previous petroleum assessments of NPR-A have generally been eliminated from the final EIS text.

1869-031
The comments are essentially true in this circumstance. Both assessments relied heavily on available prospect maps produced by an outside contractor (Tetra Tech) to develop pool area and pool number distributions. The last sentence in the referenced paragraph has been deleted.

1869-032
The paragraph describing comparisons between the current and previous petroleum assessments of the NPR-A has been deleted from the final EIS text.

Issues raised about successive MMS assessments of the Alaska offshore are addressed elsewhere in reports on that work. However, we can point out that significant changes to both the computer models and methodology, as well as new data and engineering technologies, led to changes in our resource assessments between 1989 and 1995.

Section III.A.1.b has been revised and no longer contains the statement to which the phrase "and covered by thin eolian sands" was a suggested addition.

1869-033
The text in Section III.B.1.b has been revised in response to this comment.

1869-034
The text in Section III.A.1.d has been revised to summarize information on sand and gravel resources that are relevant to the purposes of this IAP/EIS.

1869-035
The text in Section III.A.1.d has been revised, and the revisions include many of the suggestions noted in the comment.

1869-036
The information on regulations pertaining to sand and gravel in Section III.A.1.d are appropriate for the purposes of the IAP/EIS.

1869-037
Section III.A.1.d has been revised in response to this comment.

1869-038
Section III.A.1.d(3) has been revised in response to this comment. The U.S. Army COE Cold Regions Research Engineering Laboratory (CRREL), an early engineering contributor and researcher, continues to monitor sites in the NPR-A for long-term change. Their work today is part of a cooperative research program involving climate, engineering science, and deep well monitoring. The CRREL's continuing work focuses on temperature change and ground effects of construction projects, including the effects of gravel-based airfield and construction pads on permafrost, efficiency of engineering designs including insulating techniques, and long-term impacts of now pads and ice roads.

1869-039
Section III.A.1.d has been revised in response to this comment.

The U.S. Army Cold Regions Research Engineering Laboratory (CRREL),an early engineering contributor and researcher, continues to monitor sites in the NPR-A for long term change. Their work today is part of a cooperative research program involving climate, engineering science,
and deep well monitoring. CRREL's continuing work focuses on temperature change and ground effects of construction projects, including the effects of gravel based airfield and construction pads on permafrost, efficiency of engineering designs including insulation techniques, and long term impacts of snow pads and ice roads.

1869-040
Section III.A.1.d has been revised in response to this comment.

1869-041
The suggested statement has been added to Section III.A.1.d.

1869-042
The suggested revision has been made to Section III.A.1.d.

1869-043
The Paleontological section has been reviewed, and BLM believes the information presented is appropriate for the IAP/EIS.

1869-044
The suggested revision has been made to Section III.A.1.f.(1)(d).

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Vice President
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Treasurer

1898

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March 11, 1998

RE: Comments on Draft EIS for National Petroleum Reserves

NPRA Planning Team:

The Pacific Coast Federation of Fishermen's Associations is the largest organization of commercial fishermen on the west coast, including within its ranks thousands of fishing families from San Diego to Alaska, many of whom are salmon fishermen in Alaskan waters. The Institute for Fisheries Resources is the conservation affiliate of PCFFA and dedicated to the protection and restoration of marine and anadromous aquatic resources. We present these comments on behalf of both organizations.

Fundamentally there is no compelling reason to lease any part of the western Arctic for oil drilling at this time. When the Reserve was established in 1923, it was intended to be tapped only at a time of pressing national need. While politicians and oil companies argue that the nation "needs" this oil, millions of barrels are being shipped to Asia, world oil prices are falling, US automobile fuel efficiency is increasing, and the oil industry predicts central Arctic production to increase in the next five years. We therefore oppose oil leasing in the National Petroleum Reserve in Alaska at this time.

The draft EIS has several significant deficiencies, including a lack of adequate evaluation of direct, 001
indirect and cumulative impacts, or any consideration of impacts outside the region, most notably to
both commercial and recreational fisheries which depend upon rivers originating within the 4.6 million
acre planning area. Furthermore, there is virtually no analysis of the environmental impact of the 002
massive increase in oil production which this project would entail on marine and aquatic resources
generally. If *any portion* of the petroleum production is or *may be later* transported by ocean barge,

Mr. Gene Terland
NPRA Planning Team

March 11, 1998

for instance, this would greatly increase oil barge traffic along coastal areas and multiply the potential 002
spill risk for these barges on economically important marine fisheries. Alaskan fishermen still
remember the Exxon Valdez disaster all too clearly -- *including* the oil industry's previous assurances
that such a disaster was impossible -- to have much faith in the EIS's complete lack of consideration
or analysis of these issues.

These and other inadequacies of the draft EIS are so great as to make it impossible to make a reasoned judgment about the effectiveness of opening the northeastern section of the Reserve to oil and gas leasing or its potential environmental impacts.

None of the management alternatives presented in the draft EIS provide adequate protection for the unique aquatic resources originating within or which could potentially be affected by oil extraction operations within the northeastern Reserve. No consideration was given to permanent protection for these resources and none of the alternatives prohibit placement of support facilities and transportation infrastructure anywhere in the northeastern section of the Reserve, including within major river
systems. The potential for a major oil spill, and its potential for severe impacts on important aquatic 003
resources -- including commercially important Pacific salmon runs in some areas -- has simply not been adequately discussed.

It is timely to evaluate the aquatic, wildlife and wilderness resources within the Reserve outside 004
the boundaries of the designated Special Areas, and give consideration to what levels of protection
these resources may warrant. The rationale given by the Bureau of Land Management (BLM) in the 005
draft EIS for not considering any lands within the Reserve for designation as wilderness is seriously flawed. The Alaska Lands Act only exempts these lands from *mandatory* requirements for wilderness review. The Secretary of the Interior still has the discretionary authority to conduct such a review. We recommend that he do so without further delay.

There is no national energy policy. A national energy policy is necessary to address concerns about global climate change and our national dependence on fossil fuels. Before tapping one of our nation's last petroleum reserves, the Clinton Administration should develop a national energy policy that encourages energy conservation, efficiency, and renewable sources rather than continued dependence on fossil fuels.

Thank you for this opportunity to comment on the draft Environmental Impact Statement. Please include our comments in the official record.

Sincerely,

Glen H. Spain
for PCFFA/IFR

npa-com.rtf

1898-001
The cumulative analysis for the fisheries resources of the northeastern NPR-A is based on the best scientific information available and on future activities that are most likely to affect the fisheries resources of that area. Impacts on fish originating in the planning area are expected to be so small that impacts on fisheries outside the region are considered unlikely (see Sec. IV.F.7).

1898-002
The oil resources that might be developed as the result of oil and gas leasing in the Northeast NPR-A Planning Area are estimated to range from 0 to 2,200 MMbbl of oil (Table IV.A.1.b-6), depending on the price of oil, the area leased, and the number of oil and gas lease sales. The estimates are based on the assumption that oil will be discovered and produced. The estimated oil resources range from 0 to about 20 percent of the crude oil (11,570 MMbbl, Table IV.A.5-7) already produced from Alaska's North Slope fields.

Any oil that might be produced from fields in the planning area would be mixed with other North Slope oil before transport through the TAPS to the terminal at Valdez, Alaska. The volume of oil that might be produced from the planning area is estimated to range from about 4 to 10 percent of the volume produced from other North Slope fields (Sec. IV.A.5). From Valdez, the oil would be shipped via tankers along routes shown in Figures IV.A.5-2 and 3.

The effects of a large spill along the tanker route south of Valdez on aquatic resources are analyzed in Appendix B of the EIS. Also, the effects of large oil spills on migratory threatened and endangered species along tanker transport routes off the Washington, Oregon, and California coasts are analyzed in Section IV.C.10(c) of the EIS. In addition, the Bibliography contains references to EIS's that analyzed the effects of large oil spill in the marine environment; the EIS's cited in the Northeast NPR-A Planning Area IAP/EIS are for OCS Oil and Gas Lease Sales 124, 144, 149, 158, and 170.

1898-003
Appendix B discusses the impacts of a major oil spill, including those on salmon.

1898-004
This IAP/EIS effort assessed the resource values throughout the planning area, not just those in the Special Areas. Some of the LUEA's and protections considered in the alternatives, including the Preferred Alternative, are outside the Special Areas.

1898-005
For a discussion on the reason wilderness is not appropriate for consideration in this IAP/EIS, please see Response 1851-058.

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1899

RAPTOR RESEARCH FOUNDATION, INC.

Office of the President
10230 W. Amity Rd.
Boise, ID 83709

11 March 1998

NPR-A Planning Team
Bureau of Land Management
Alaska State Office
222 W. 7th Avenue, # 13
Anchorage, AK 99513-7599

Dear Planning Team Members:

I am writing you on behalf of the Raptor Research Foundation, Inc. (RRF), an organization that represents approximately 1200 professional raptor biologists and scientists from more than 55 different countries. The membership of RRF includes most, if not all, of the surviving pioneer biologists that discovered and then studied over the last 40 years the unique concentrations of nesting raptors along the Colville River of Alaska. Many of our members have an intimate understanding of the ecological resources of the Colville River area, especially of the remarkable number and density of raptors that breed in this region. Because of this long-standing interest in the conservation of raptors of the Colville River, several members of our organization have reviewed the draft Environmental Impact Statement (EIS) on the management of the National Petroleum Reserve-Alaska (NPR-A) and the potential for oil development in NPR-A. We offer the following comments:

1) The Colville River Special Area was designated in 1977 to provide protection for the Arctic peregrine falcon. According to the EIS, legislation that guides management of National Petroleum Reserves requires that Special Areas are managed to provide for the maximum protection of surface values, such as raptors within the Colville River Special Area. Yet, to date, no long-term management plan for the Colville River Special Area has been developed. A comprehensive, long-term management plan that addresses the multiple uses of the Special Area should be developed by a team of raptor experts prior to leasing for oil or mineral exploration and development. If it would be helpful, I could recommend specific members of the RRF, who have first-hand knowledge of the Colville River area and its resources, and who could provide leadership or assistance in developing such a management plan. 001

2) We note that in 4 of 5 alternatives (B-E) offered, the EIS proposes to allow oil development within much or all of the Colville River Special Area. In these four alternatives, the restrictions or stipulations intended to protect raptors are limited to the area within one mile, and sometimes less, of the Colville River and its tributaries. There is little or no review in the draft EIS of the literature on raptors and their response to disturbance. Because the literature was not reviewed, there is no discernable basis for the estimates of impacts to raptors and other wildlife in the Environmental Consequences section of the draft EIS. We believe that incorporation of all available scientific information is essential to providing sound resource management, and suggest that this effort is pursued prior to leasing within the Special Area. Again, this illustrates the need to involve experts who are familiar with the resource and recent research on the impacts of disturbance on nesting raptors when formulating management strategies. 002

3) As noted above, the small portion of the Colville River Special Area in which restrictions on oil development are applied to protect raptors and other wildlife (called the Colville Raptor, Passerine, and Moose Land Use Emphasis Area, or LUEA), is only one-mile wide. We believe that this buffer should be expanded to provide protection for all components of the ecosystem upon which the raptors and other wildlife along the river depend. Given the uncertainty surrounding impacts of development and disturbance on many species of wildlife, and the inadequate review of relevant studies in the EIS, we believe that a more conservative approach to managing the major drainages within the region is warranted. We propose, therefore, that buffer zone on both sides of the Colville, Ikpikpuk, Kikiakrorak, and Kogosukruk rivers should be at least two miles wide, and that leasing is prohibited within this buffer. The actual width of the buffer zone should be designed to address the circumstances of each unique river stretch within the Colville River Special Area. These specific buffer zones could be delineated during the development of the long-term management plan that we suggested above. 003

As you know, much attention and effort in recent decades was directed at the recovery of peregrine falcons around the world. The RRF and many other organizations and individuals watched with great pride in 1994 as Arctic peregrine falcons became one of very few taxa to be removed from the list of threatened and endangered wildlife because of population recovery. Although the subspecies no longer requires protection under the Endangered Species Act, the available data suggest that population recovery is not yet complete, and we are concerned for its future conservation as well as that of the other raptors (including gyrfalcons, rough-legged hawks, golden eagles, and merlins), that share the habitat along the Colville River. We hope that you will incorporate our comments into you management of the Colville River Special Area.

If you wish for me to put you in contact with RRF members, who are knowledgeable about the Colville River and its raptor resources, that could potentially participate with management and planning efforts for the Colville River Special Area, please contact me.

Sincerely,

Michael N. Kochert

Michael N. Kochert
President

1899-001
The Preferred Alternative calls for a Colville River Management Plan for the Special Area, including some areas proposed to be added to the Special Area largely because of their value for raptor habitat. In addition, we intend to conduct a raptor workshop to review the scientific literature on disturbance to raptors and to identify potential additional mitigation measures preliminary to developing the plan. The participants in the workshop as well as in the Colville River Management Plan team will extend beyond those in the BLM.

1899-002
A discussion of the effects of disturbance on peregrine falcons has been added to Section IV.C.8.

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1899-003
This comment was factored into decisions regarding the Ikpikpuk River and the Colville River and its tributaries in the Colville River Raptor, Passerine and Moose Habitat LUEA. The Preferred Alternative allows leasing in these areas, but prohibits nearly all surface occupancy associated with oil and gas development within 1 mi of the rivers. It also includes a special consultative provision for an area 2 mi around these rivers. For further discussion of the 1 mi setback and raptors, please see Response 1850-001.

OILWATCH ALASKA

1900

PO Box 101553 Anchorage, AK 99510 ●● Ph: 907-277-8910 Email: oilwatch@alaska.net

March 12, 1998

Mr. Gene Terland, NPRA Planning Team
Bureau of Land Management
222 West 7th Avenue
Anchorage, AK 99513-7599

Dear Mr. Terland and Members of the Planning Team,

Oilwatch Alaska, a nonpartisan independent public interest organization of Alaskans working for open government and fairness on matters of our commonly-owned oil and gas resources. This letter supplements our brief letter to you dated January 21, 1998, presented along with a report about potential anti-trust violations that need investigating entitled, *The Big Squeeze: TAPS and the Departure of Major Oil Companies Who Found Oil on Alaska's North Slope* by Dr. Richard Fineberg.

1. Leasing within NPRA is not needed. Leasing at this time is contrary to the purposes for which the reserve was established, and the contemplated development is not "in a manner consistent with the total energy needs of the nation." [PL94-258] 001

The United States represents less than 1/16th of the world's population, yet we use 1/3rd of the worlds energy. Leasing NPRA at this time will only hasten the day we use up our domestic petroleum resources and become dangerously dependent on foreign sources of oil in the near future--sources which will become extremely expensive as we deplete our own oil. The Union of Concerned Scientists has developed an energy plan for the United States, but our national government has not. National energy need is not addressed in the DEIS. Without a national energy policy, there is no context within which to evaluate how developing the NPRA relates to meeting the nation's "total energy needs."

No criteria for that important and pertinent decision are offered. Certainly, the current oil market condition and price of oil does not support developing NPRA oil or gas resources at this time. Not only is the price of Alaska North Slope (ANS) crude is at a multi-year low, but it has failed to ever reach the levels upon which previous studies have projected potential reserves.

Long-term price projections by Cambridge Energy Research Associates, (CERA), provided to the State of Alaska in February 1998 indicate a long-term trend in low oil prices. For example, by 2001, CERA projects prices of Alaska oil at $19 to $19.50 per barrel, not adjusted for inflation, and says that prices could continue downward into the longer term. (T. Bradner, February 16, 1998. "Oil markets: Expect low prices to continue, experts say." Alaska Oil and Gas Reporter/Alaska Journal of Business and Commerce, p. 4, 10).

The DEIS evaluation is based on a current oil price of $18.00 per barrel and a fantasy price of $30 per barrel. This generous overestimate distorts the true potential oil contribution for national energy needs. In fact, at the current oil price of Alaska crude oil at $12.25 per barrel (Oil & Gas Journal Online, Industry Statistics, February 25, 1998), BLM's current projections find that NO economically recoverable oil would be found (see DEIS p. III-A-28, "Note that at prices below $15/bbl, no economic resources are present, even at high-risks.") 001 002

The export of Alaskan oil is another issue deserving of consideration. Since 1996, when the requirement that all ANS crude must be marketed in the United States was removed, exports to Pacific Rim nations have risen to a current range of 26,000 to 135,000 barrels per day (bpd).

British Petroleum's CEO John Browne noted the importance of the Asian market in a recent speech before the Alaska Industry Support Alliance. Browne said that lifting the ANS export ban was "one victory for Alaskans and for BP that has fundamentally changed the way the world views the competitiveness of Alaska investments." In recent years, new ANS production forecasts have consistently increased. At any time that ANS production exceeds West Coast demand, it is reasonable to conclude that a portion of production from NPRA (and perhaps all of it) will be shipped to Asian markets. Export of NPRA oil production does not serve the nation's energy needs. Lacking a requirement that all NPRA oil and gas reserves must be marketed in the United States, a decision to allow oil and gas development in the northeastern NPRA at this time is inconsistent with the purposes for which the Reserve was established.

Discussion found at p. I-8 says: "Concurrent with the NEPA analysis, BLM, in cooperation with MMS, is analyzing geologic data, including massive amounts of seismic data ... " If such additional work is needed at this time to analyze geological data for identifying oil and gas lease tracts, why has a DEIS that is strongly oriented toward early and extensive leasing activities been released now? The public is being asked by BLM to dispose of public resources without having adequate information that allows them to judge what they're giving up, or what they're getting for whatever is given up. Adequate data is needed before the public can make a reasoned judgement about oil leasing in this region. 003

2. Serious anti-trust violations need to be investigated before any federal oil is leased that could potentially be delivered to the Trans-Alaska Pipeline System. 004

There are currently two questions of anti-trust before the Federal government, one before the Federal Energy Regulatory Commission, (FERC), protesting the capacity settlement between the State of Alaska and major Trans-Alaska Pipeline owners, [Oxy Protest of Alaska Capacity Settlement Agreement], and another regarding the marine transport of Alaskan oil in federal court, [Maritime Endeavor Associates, L.P. v. Alyeska Pipeline Service Co., et al., "Complaint" under Clayton and Sherman Antitrust Acts, Case No. 397-010 CV [HRH], May 27, 1997].

Honest competition needs to be a prerequisite if or when oil is taken from NPRA. The federal government should not be a party to oil that may be part of anti-trust activities. More evidence continues to emerge that a federal anti-trust investigation is needed prior to any leasing.

3. The evaluation of potential impacts from oil development activities in the northeastern NPRA is based upon a series of proposed development scenarios that are incomplete and unrealistic when evaluated in the context of existing development in the region, resulting in significantly understated potential impacts.

The DEIS fails to describe thoroughly or in detail, the alternative potential transportation infrastructure associated with the various levels of development to be allowed in the northeastern NPRA. The DEIS description is based upon an assumption that no major road networks will be built (although such road construction is not prohibited by the stipulations). While existing oil fields (including Kuparuk, Milne Point and Endicott) may have initially been described and even constructed as distinctly separate fields, over time the industry has argued successfully for connecting roads to the main Prudhoe field and Trans-Alaska pipeline terminus. It is realistic to assume connecting roads will be built, contrary to the vastly understated assumptions made by BLM. The impacts of a network of connecting access roads, as well as the extraction of gravel needed to construct these roads needs to be fully described and discussed. 005

There are many additional deficiencies that deserve to be addressed, but clearly no action should be taken at this time. Perhaps oil and gas from this region will be needed in the future, but the current activity on state lands is expected to increase 50% over the next several years up to 1.5 million barrels of oil per day between the Canning and Coleville Rivers.

It looks like a deal has been cut to lease NPRA, and that is repugnant to all who believe citizens should participate meaningfully in their democracy. The best interest of Alaskans and Americans cannot be well-served if leasing takes place without further thorough examination and development of a national energy policy.

For the public interest,

Most sincerely,

Jim Sykes

Jim Sykes, Executive Director

1900-001
For discussions on the role of NPR-A in the Nation's energy future and the purpose of the Reserve, see Sec. I.A. and I.B.1. Also, please see Response 1851-002.

1900-002
Please see Response 1851-003.

1900-003
Please see Response 1851-005.

1900-004
The current litigation is unrelated to the decision on what, if any, lands in the NPR-A should be made available to oil and gas leasing.

1900-005
Rationale for the roadless development assumption is provided in Response 1851-011.

UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

March 17, 1998

1908

NPR-A Planning Team
Bureau of Land Measurement
Alaska State Office (930)
222 W. 7th Avenue
Anchorage, Alaska 99513-7599

To Whom It May Concern:

Enclosed are comments on the Draft Environmental Impact Statement for Northeast National Petroleum Reserve-Alaska. We hope our comments will assist you. Thank you for giving us an opportunity to review this document.

Sincerely,

SUSAN B. FRUCHTER

Susan B. Fruchter
Acting NEPA Coordinator

Enclosure

P

MEMORANDUM FOR: Susan B. Fruchter
Acting NEPA Coordinator

FROM: Charles W. Challstrom
Acting Director, National Geodetic Survey

SUBJECT: DEIS-9803-01-Northeast National Petroleum Reserve-Alaska

The subject statement has been reviewed within the areas of the National Geodetic Survey's (NGS) responsibility and expertise and in terms of the impact of the proposed actions on NGS activities and projects.

All available geodetic control information about horizontal and vertical geodetic control monuments in the subject area is contained on the NGS home page at the following Internet World Wide Web address: http://www.ngs.noaa.gov. After entering the NGS home page, please access the topic "Products and Services" and then access the menu item "Data Sheet." This menu item will allow you to directly access geodetic control monument information from the NGS data base for the subject area project. This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project.

If there are any planned activities which will disturb or destroy these monuments, NGS requires not less than 90 days' notification in advance of such activities in order to plan for their relocation. NGS recommends that funding for this project includes the cost of any relocation(s) required.

For further information about these monuments, please contact Rick Yorczyk; SSMC3, NOAA, N/NGS; 1315 East West Highway; Silver Spring, Maryland 20910; telephone: 301-713-3230 x142; fax: 301-713-4175.

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

March 9, 1998

MEMORANDUM FOR: Susan B. Fruchter
Acting NEPA Coordinator

FROM: For Steven Pennoyer
Administrator, Alaska Region
Donald J. Berg

SUBJECT: National Petroleum Reserve - Alaska
Draft Environmental Impact Statement

The Alaska Region has reviewed the subject Draft Environmental Impact Statement (DEIS) for the National Petroleum Reserve-Alaska (NPRA) dated December 1997. The document presents the Bureau of Land Management's (BLM's) alternative management approaches for 4.6 million acres in the northeastern part of the NPRA. The alternatives present a range of actions that BLM could take to manage the surface and subsurface resources of the planning area. NMFS' comments relate to those issues that could potentially impact fisheries and marine mammals.

FISHERIES

The document states, "The distribution and abundance of freshwater and migratory fish within the planning area depends on (1) adequate overwintering areas, (2) suitable feeding and spawning areas, and (3) access to these areas (typically provided by a network of interconnecting waterways (Parametrix, Inc., 1966) (III-B-5 par 2)."

The NMFS agrees with the above statement. The greatest impacts to fisheries populations and habitat as presented by the document are water depletions, gravel removal, erosion and sedimentation, and spills

Attachment A references significant sections within the document and summarizes NMFS concerns relative to these impacts.

MAR 20 1998
SP

General Recommendations

Wild and Scenic River status should be linked to Wild and Scenic Act criteria and not to specific Alternatives (II-19). The most probable designation would be "wild" status. Motorized travel on the river should be considered for traditional subsistence users. 001

Teshekpuk Lake Watershed is one of the most productive, diverse, and unique wetland ecosystems on the North Slope (II-1, par 7). The Teshekpuk Lake Land Use Emphasis Area (LUEA) should be included in all alternatives. 002

Water removals from fish bearing lakes and streams have a significant potential for impacting overwintering fish. The most important overwintering habitat is protected in the Fish Habitat LUEA. The Fish Habitat LUEA should be included in all alternatives. 003

Specific Comments

Section II-28. Stipulation 9. "Small caches" needs to be defined. As presently written, "small caches" could be interpreted to mean that 1,319 gallons of fuel could be placed on a stream bank in individual containers. A more suitable amount for a small cache would be 210 gallons. 004

Section II-29. Stipulation 16. Stipulation 16 does not adequately protect fish and needs to be rewritten. The document states that, "Adverse effects could occur if water is taken from areas where fish are overwintering. Lethal effects could be expected on 50 to 100 percent of these overwintering fish (IV-C-50 par.1)." A 50-100 percent fish kill in any area is unacceptable. Where did the 15 percent drawdown number for lakes come from? Based on the analysis and projected fish kill this standard does not adequately protect fish and needs some study and adjustment. Withdrawals from all fish bearing lakes need to be monitored for dissolved oxygen (DO) and pH (see inventory and monitoring). Standards need to be established that keep DO and pH from reaching critical levels both during the withdrawal and throughout the rest of the winter. If monitoring cannot be completed or standards established that eliminate fish kills, water withdrawals from fish bearing lakes should be eliminated. New ice-road and pad construction methods should be required. 005

Using such methods as aggregate "chips" shaved from frozen lakes will significantly decrease water demands, construction time and impacts on fisheries. 005

Section II-29. Stipulation 20. Item c. This should read: "Travel within 100 feet of overwintering fish streams and lakes is prohibited (except for crossings) to help avoid disturbance to riparian vegetation, stream-channel morphology, and resident fish populations." This will also reduce impacts from thermokarst erosion caused by seismic trails. 006

Section II-29. Stipulation 20. Item f. This section should have an additional sentence: "Stream crossings will avoid fish spawning areas." This requires that spawning areas be documented (see monitoring and inventory). 007

Section II-31. Stipulation 40. Although the stipulation states that gravel sites must not occur within an active floodplain of watercourses, it needs to be clear that gravel extraction should not occur in lakes and streams. Before the decision is made to remove gravel from the floodplain to "enhance fish habitat" a thorough analysis needs to be made that includes the effects gravel mining has on spawning gravels and the recruitment of gravels into stream systems. Given the paucity of gravel sites in the planning area and the cost of bringing in gravel from outside the planning area, gravel reducing technology (composite pads, etc.) should be required. 008

Section II-32. Stipulation 41. Since the footprints of developed sites impact areas that are substantially larger than the actual construction or fill, for those streams and lakes not listed in Stipulation 39, setbacks for fish bearing basins and streams need to be increased to a minimum of 1/4 mile. 009

Section III-B-8. The document gives very little space to salmon. Although salmon populations are not large, salmon are taken in all the villages for subsistence (III-C-10-16). More analyses should be made of impacts on salmon and salmon habitat. 010

Section IV-A-33. There is no quantitative analysis of pipeline spill rates and effects on fish or waterbodies. Most of the analysis concentrates on tundra (IV-A-34 par. 1). The document

states that half the planning area is made up of water. Oil spill effects need to be quantified for waterbodies. 011

Section IV-E-6. Paragraph 7. Alternative D opens coastal areas in the Coleville River Delta and Harrison Bay. The document omits any meaningful analysis of marine and anadronous fishery impacts. 012

Section IV-F-8. Paragraph 1. Alternative E includes a coastal docking facility. The size, location, design and operation of such a facility needs to be described more specifically before any meaningful analysis occurs. 0113

Fuel storage requirements. These are not consistent throughout the document. Setbacks from water should be 500 feet and small caches should be limited to 210 gallons. 014

> Section IV-A. Paragraph 5. Caches with more than 500 gallons should be within a containment, normally a portable containment dike.
>
> Section II-28. Stipulation 9. Fuel, other petroleum products, and/or other liquid chemicals designated by the AO, whether in excess of 660 gallons in a single tank or in excess of 1,320 gallons in multiple containers, shall be stored within an impermeable lined and diked area capable of containing 110 percent of the stored volume. The storage area shall be located at least 500 feet from any river, lake, or stream with the exception of small caches for motor boats and float planes. Material used as a liner must be capable of remaining impermeable during typical weather extremes expected throughout the storage period.
>
> Section IV-B-3. Paragraph 2. Stipulations in place require no storage in active lake floodplains and at least a 100-ft setback from any river, lake, or stream, with impermeable dikes around facilities over 660 gallons.

Section IV-B-5. Paragraph 4. The document states,"Because of this, arctic fish populations have adapted to withstand at least short-term perturbations and fluctuations in the environment, whether natural or human caused." In order to make this 015

statement, "perturbations" and "short term" would need to be defined. Human actions especially need to be defined. For example, natural yearly flooding over well vegetated tundra is different than thermokarst erosion and resulting turbidity 75 times over normal levels caused by seismic trails. The statement needs to be deleted or clarified. 015

Section IV-C-10. Paragraph 2. The document states that stipulations 20a and 20j are ineffective in protecting water quality and actually could increase water-quality effects as discussed under Alternative A. Does this mean that these stipulations need to be more stringent, or altered, or eliminated? 016

Section A-1. Item 3. Inventory and Monitoring. The inventory and monitoring section in the document is decidedly short. In order to avoid and assess impacts to fisheries, good baseline information is needed. The entire planning area does not have to be inventoried, but lakes and streams within a reasonable impact distance of management activities need to surveyed for fish so that impacts can be avoided. Within these areas, if oil exploration and development occur, more detailed monitoring studies should be implemented to assess management impacts upon fisheries habitat and populations. 017

Specifically, inventory and monitoring needs to include:

Surveys to establish which streams and lakes are used by fish.

Spawning habitat and use.

Overwintering habitat and populations.

DO levels need to be monitored so that water depletions don't significantly impact fish. Natural DOs need to be established for fish overwintering lakes. Standards need to be established that anticipate continued reduction of DO throughout the winter.

As with DO, pH levels need to be established and monitored to ensure that water depletions that don't impact fisheries.

Monitoring plans should include determining effects on fisheries habitat (sedimentation, DO, pH, spawning areas, pool depth, water quality, etc.), and fish populations (including species composition and age structure). 017

MARINE MAMMALS

Section IV-G-9&10 018
The impact of human activities on the behavior and productivity of marine mammals has not been well quantified. Most examinations have been anecdotal accounts of short-term responses without rigorous statistical support or controls. The need to determine the long-term effects of human activities will continue to be a growing concern of the NMFS as development increases in coastal areas.

The NMFS is concerned about the increase in vessel traffic and aircraft activity within the range of bowhead whales associated with Alternatives C - E. These activities may affect the behavior of bowhead whales enough to alter subsistence activities and hunters' success. The NMFS suggests minimizing the activity of aircraft and vessels during the bowhead migration to reduce the affects on bowhead whales and the communities that rely on them. 019

Thank you for the opportunity to comment, should you have any questions or additional information please contact Dan Vos at 271-5006.

ATTACHMENT A

Water depletions

Adverse effects could occur if water is taken from areas where fish are overwintering. Lethal effects could be expected on 50 to 100 percent of these overwintering fish (IV-C-50 par.1).

In deeper waters that do not freeze to the bottom, the amount of dissolved oxygen is of critical importance (III-B-5 par. 2).

The winter extraction of water or ice from NPR-A waters could change the chemistry of those waters (IV-C-5 par. 10).

Winter removal of more saline water underneath the ice would result in less saline, less buffered lake waters in early summer following winter water extraction (IV-C-6 par. 2).

The preferred lake would be no more than 6 ft deep. Water could be extracted from deeper lakes, but these lakes are likely to have fish that would be put at risk from water removal (IV-C-5 par. 10).

An ice road across such an intermediate-depth lake (a few feet deeper than 6 feet) would be designed to freeze the entire water column below the road, isolating portions of the lake basin and restricting circulation. With mixing thus reduced, isolated water pools with low oxygen could result. Dissolved oxygen concentrations could be reduced below the 5-ppm dissolved oxygen standard needed to protect resident fish (ADEC, 1977) (IV-C-6 par. 3).

Under-ice withdrawls from areas having water and dissolved-oxygen levels barely to moderately sufficient to support overwintering fish would be likely to kill many of the fish overwintering there (IV-C-16 par. 1).

Gravel Removal

The effects of gravel construction and gravel extraction activities in high density areas are expected to be spawning failure and mortality for many of the fish affected (an estimated 10-year recovery) (IV-D-7 par. 4). This may be overly 020

optimistic in low gradient streams that don't move a lot of gravel. A very likely scenario would be for the pits to fill up with silt. This would be especially probable if other management actions produced upstream erosion. 020

Improper siting of gravel-removal operations can result in changes to stream channel or lake configuration, stream-flow hydraulics or lake dynamics, erosion and sedimentation, and ice damming and aufeis formation. Locating gravel pits far enough away from streams and lakes to avoid breakup or storm flooding will greatly minimize these effects to water resources. While gravel sources are scarce in the planning area, sand and silt are more abundant. Composite or all season pad designs, using a mixture of gravel, sand, and silt layered with styrofoam and geotextiles, can significantly reduce gravel requirements (IV-C-4 par. 7).

Because gravel is a scarce commodity, alternative construction technology could be refined to lessen gravel use and associated impacts, but such alternatives are not assumed (IV-C-7 par. 8).

Gravel extraction from or near overwintering and spawning habitat is likely to adversely affect arctic fish by reducing the amount and quality of habitat available to them. Because overwintering and spawning habitat represents less than 5 percent of the planning area, gravel removal from these areas would be likely to result in spawning failure and mortality for many fish within the affected area (IV-C-17 par. 1).

Erosion and Sedimentation

Construction of pads, roads, pipelines and airstrips could cause spawning failure and mortality in 50 to 100 percent of the fish in high density areas, requiring a 10-year recovery period (IV-C-50 par.1).

Based on the ANWR experience, 29 percent of seismic trails could have degraded cover, with potential for long-term thermokarst erosion (IV-B-2 par. 11). Both the JTU and suspended-sediment concentrations increased much more than 20 percent, rather by an order of magnitude across the thermokarst feature. Thus, thermokarst erosion could cause the State turbidity standard to be exceeded within and downflow of thermokarst features (IV-B-3 par. 1).

The potential impacts of oil and gas development on the water resources in the planning area may include disturbance of stream banks or shorelines and subsequent melting of permafrost (thermokarst), blockages of natural channels and floodways that disrupt drainage patterns, increased erosion and sedimentation, and removal of gravel and water from riverine pools and lakes (IV-C-4 par. 3).

Stream banks and lake shores are particularly vulnerable to thermokarst, because the wave action of the water will accelerate the removal of the degrading protective cover. Fine-grained sediments are the most likely to contain ice-rich permafrost, resulting not only in extensive thermokarst but also in increased sediment erosion and changes to stream channel and bed morphology (IV-C-4 par. 4).

In addition to thermokarst and drainage alteration, erosion and addition to thermokarst and drainage alteration, erosion and sedimentation can be caused by construction activities or vehicular crossings, especially during periods of high stream flow or lake levels. Inadequate design or placement of structures, culverts, or bridges can alter natural sediment transport and deposition, creating scour holes or channel bars. Improper placement or sizing of gravel fill can result in erosion from pads or roadbeds adjacent to streams or lakes (IV-C-4 par. 5).

Construction in high-density spawning and overwintering areas, or access corridors used by migratory fish, would be likely to adversely affect a relatively large number of freshwater and migratory fish. The resulting effect on arctic fish are likely to be spawning failure and/or morality of many fish. Recovery would be expected in about 10 years (IV-C-6 par. 2).

Spills

Crude- oil-spill cleanup from production operations and pipelines is possible and could adversely affect streams and lakes (IV-C-5 par 2).

The NPR-A Oil-Spill Experiment: Half of the oil was estimated to be evaporated or degraded within a year, but the rest of the oil remained with little change for at least 5 years. Sedges oiled

at the waterline along the pond margins did not suffer visible damage the first summer. However, during subsequent years, their new leaves were unable to penetrate oil mats, which killed the plants under the mats. The waters of the oiled pond remained toxic to more sensitive zooplankton species for 7 years. There also were long term (several-year) observable effects on phytoplankton and insect population and shorter term effects on benthic algae and microbe populations (IV-A-37 par. 7).

Waters from the reserve pits and some ponds within 160 feet but not at greater distances were found to be toxic to a sensitive zooplankton species in bioassays (IV-C-7 par 4).

Historically, because clay is the standard liner for waste pits, the clay in drilling muds has been assumed alone to be adequate as a pit liner. However, the chemical formulation of drilling muds is designed to keep the drilling mud dispersed, which can eliminate its ability to act as a seal. The potential for impact from pit-stored drilling fluids would be reduced if fluids were properly disposed of prior to spring breakup (IV-C-7 par. 5).

1908-001
Eligibility determinations in the draft IAP/EIS were made using the criteria identified in the Wild and Scenic Rivers Act and BLM Manual 8351: *Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation and Management.* Using these criteria only the Colville River was determined eligible for inclusion in the WSR System. The alternatives presented in the draft were crafted to present the widest possible range of WSR recommendations on the Colville River for public review and comment. The State of Alaska and Arctic Slope Regional Corporation both did comment and stated they would not support any proposal to include the Colville River in the WSR System. As co-owners/managers of the Colville River their support is essential. Accordingly, the Colville River is unsuitable (unmanageable) as a Wild and Scenic River.

1908-002
The LUEA's are constructs to easily identify portions of the planning area receiving special planning emphasis. As such, all LUEA's are factored into all alternatives. If the commenter is suggesting that the Teshekpuk Lake Watershed LUEA should be made unavailable to oil and gas leasing under all alternatives, we must respond that that would be contrary to regulatory guidance that we look at "all reasonable alternatives" (40CFR1502.14).

1908-003
Please see Response 1908-002.

1908-004
The comment is addressed in Preferred Alternative Stipulation 14.

1908-005
The quoted statement references the original biological impacts analysis for fish (IV.C.7). This analyses needs to be read in conjunction with the Effectiveness of Stipulation section on page IV.C.18, which concludes that impacts on overwintering fish will be effectively mitigated by the restrictions in Stipulation 16 (Alternatives A-E) and others. See also Effectiveness of Stipulations (IV.C.9-10).

The 15-percent drawdown standard, as well as the 7-ft depth requirement, were provided by State of Alaska, Dept. of Fish and Game fisheries experts and are the criteria used for water withdrawals associated with State oil and gas leasing operations on the North Slope. Monitoring for dissolved oxygen and pH to ensure protection of water quality and overwintering fish habitat will be conducted in conjunction with any approved withdrawal from a fish-bearing lake >7 ft deep. The last part of the comment addressed in part by Preferred Alternative Stipulation 20.

The reference to "50 to 100 percent" has been changed to read "many" in Section IV.C.13.b(2) a.

1908-006
The comment is addressed in part by Preferred Alternative Stipulation 24c. Stipulation 20c (Alternatives A-E) has been deleted from the Preferred Alternative stipulations, because it created a situation that could have had the unintended result of causing more rather than less harm to stream beds. Given the large number of meandering rivers and streams in the planning area, it is likely that strict enforcement of the stipulation would require an operator to make multiple stream crossings. Experts also disagree about whether or not vehicular compaction causes enough freezedown to harm stream-channel morphology and resident fish populations. Given these considerations, we believe that Preferred Alternative Stipulations 22 and 24c and d offer an approach that will accomplish the objective of avoiding disturbance of riparian habitat, stream-channel morphology, and resident fish populations. Moreover, if additional protection is deemed necessary in particular areas, the possibility of adding more restrictive site-specific stipulations can be addressed during the permit review process.

1908-007
The BLM is committed to increasing documentation of fish-spawning areas throughout the planning area as a part of its overall research and monitoring program. In the meantime, BLM permit staff will use vegetation and other topography maps to identify likely spawning areas. As additional information becomes available through the inventory and monitoring program, we will be able to identify sawinng areas with greater specificity. It is important to recognize that many seismic activities and overland moves can cross waterbodies without need for additional ice given the thickness of the ice. Waterbodies ≤7 ft within the planning area generally freeze to the lake bottom.

1908-008
The comment is addressed in part by Preferred Alternative Stipulation 40, which defines watercourses. The BLM, in consultation with appropriate Federal, State, and NSB regulatory and resource agencies, will address research needs related to fish-sawinng waterbodies throughout the planning area as a part of its overall inventory and monitoring program. Gravel mining operations will be sited to avoid fish-sawinng areas. The final comment is addressed in Preferred Alternative Stipulation 32, which encourages operators to utilize gravel-reduction technologies.

1908-009
The comment is addressed by Preferred Alternative Stipulation 41, which provides a 500 ft setback for permanent oil and gas facilities on all waterbodies not listed in Preferred Alternative Stipulation 39. Preferred Alternative Stipulation 79 requires a 100 ft setback on all waterbodies for all other structures.

1908-010
As stated in the draft EIS, we are not aware of any established salmon populations in the northeastern NPR-A. Studies to date suggest that they are only infrequent visitors and do not successfully reproduce in the area. We are aware that some fishermen believe otherwise; however, we have no source of information that confirms this.

1908-011
The BLM and MMS recognize that pipeline are an important source of impacts. A quantitative oil-spill analysis of pipeline spills was not possible because of ADEC's database structure. A small qualitative discussion was included where pipeline spills actually were indicated in the database. This was not meant to imply that these were the only pipeline spills of record. The BLM and MMS assumed the estimated number of spills could occur from platforms, pipelines, or flowlines.

For effects on fish and waterbodies, please see Section IV and the subsections under alternatives on Fish and Water Quality. The BLM and MMS include additional analysis of a 325 bbl spill reaching Teshekpuk Lake and the Colville River in Section IV.H.

1908-012
As stated in the draft EIS, arctic fish could be affected by land-based seismic surveys, activities associated with construction, and oil spills. However, none of these events are expected to have a measurable effect on fish (marine and anadromous) in coastal waters. Onshore events may affect both freshwater and anadromous fish, and are discussed in sufficient detail under each Alternative.

1908-013
The specific size, location, and design characteristics of the docking facility are unavailable at this time and would be evaluated more appropriately during permit and development plan review.

1908-014
See Response to Comment 1908-004. The minimum setback of 100 ft cited from the draft EIS at p. IV.B.3 was incorrect and has been corrected in the final EIS in Section IV.B.4 and IV.A.1.a. The comment is addressed in Preferred Alternative Stipulations 14 and 15, and changes have been made to Section IV.B.4

and Section IV.A.1.a.

1908-015
The word "perturbations" and the phrase "short term" refer back to what was said in the prior sentences, namely, that high mortalities occasionally occur due to the harsh environmental conditions in this area. The perturbator in this case is the harsh environmental conditions that exist in the arctic region, and the duration was unspecified. Detailed information concerning natural versus human-caused fish mortalities, complete with definitions of key words and phrases such as "perturbations" and "short-term," does not exist at present. Almost all effects- related studies to date have been directed solely toward human-caused perturbations. The fact that high fish mortalities occasionally occur in the arctic environment due to natural events is common knowledge among specialists. This information has been included in the draft EIS simply to inform nonspecialists of this reality. The lack of an accepted definition for these words and phrases does not preclude this need. The remainder of the draft EIS text is focused entirely on human-caused perturbators, without any further mention or comparison to naturally caused perturbators (due entirely to the lack of information in this area).

1908-016
Clarification has been added to the discussion of Effectiveness of Stipulations in Section IV.B.4.

1908-017
These are the kinds of studies that would be required by the inventorying and monitoring program discussed in Appendix A.3. The studies to be completed in specific instances would be determined by the Interagency Research and Monitoring Team proposed in the Preferred Alterative in Section II.F.7.

1908-018
It is true that impacts of human activities on the behavior and productivity of marine mammals have not been well quantified. As with other wildlife populations, it is very difficult to separate natural variation from the influence of human activities on individual marine mammal behaviors and productivity let alone on populations. The MMS is continuing to fund and support monitoring studies on marine mammal populations such as ringed seals and bowhead whales in the Beaufort Sea, where offshore oil and gas exploration and development are continuing. These ongoing studies will help to determine if there are long-term effects of oil and gas activities in the Beaufort Sea on ringed seals and bowhead whales.

1908-019
There probably is little need for minimizing aircraft activity for this project. As stated in the text in Section IV.C.10.b(1)(b), any aircraft flights over the marine environment during the open-water season as a result of oil and gas operations in the planning area are likely to be minimal, if any even occur. Any flights that did occur likely would be very near shore, well away from the migration corridor. Likewise, the amount of vessel traffic is not expected to be large. Equipment and supplies shipped by barge likely would originate from existing infrastructure (such as West Dock or Oliktok Point) and travel to staging areas in the planning area. Some of the equipment and supplies likely would be shipped before the fall migration started. It also should be noted that barging is not the only alternative for moving equipment and supplies. Supplies also can be moved overland in the winter. Any effects on whales is likely to be minimal, because the number of barge trips is likely to be fairly small and the route traveled is likely to be fairly close to shore, well inside the bowhead migration route.

1908-020
The scenario of removing gravel from low-gradient streams noted by the comment is unlikely to occur and the impact analysis provided in the IAP/EIS is considered appropriate for those cases (higher-gradient streams) in which gravel might be removed. Gravel is scarce in the streams of the planning area, especially streams with a low gradient. Consequently, it is unlikely that gravel would be removed from any low gradient streams. Moreover, Alternative A-E Stipulation 40 and Preferred Alternative Stipulation 40 generally forbid removal of gravel from stream beds or their active floodplains. Exceptions would only be granted under restricted conditions and only after consultation with appropriate regulatory and resource agencies.

1926

From:
To: ilmakcso.ilmakdsl(@ducker)
Date: Wed, Mar 11, 1998 9:08 pm
Subject: URGENT - DEIS Comments

COMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT REGARDING THE PROPOSA=
LS TO OPEN THE NATIONAL PETOLEUM RESERVE - ALASKA FOR OIL EXPLORATION. 001

I found the Draft EIS seroiusly lacking in its discussion of CUMULATIVE I=
MPACTS of the proposed alternatives. Opening NPR-A for oil extraction is=
likely to have far-ranging effects on many aspects of Federal Government=
policy. The following issues should be discussed in the Final EIS:

Transportation Policy
How will the alternative plans affect highway funding for both maintenen= ce of existing roads & for new construction? Many of our existing highwa= ys are in desperate need of repairs, particularly bridges. How will the = alternative plans impact research and implementation of strategies for in= corporating non-motorized transportation, alternative fuel vehicles and m= ass transit into our country=92s transportation strategies?

Energy Policy
How will the alternative plans affect research and implementation of str= ategies for incorporating non-fossil fuel sources of energy into our nati= on=92s energy policies? How will an increased supply of petroleum impact=
efforts to encourage energy conservation? An increase in oil supplies i= s likely to increase U.S. dependence on petroleum as a major source of fu= el. Does this dependence benefit the U.S.?

Urban Planning
How will the alternative plans affect efforts to revitalize city centers=
and control urban sprawl? Such sprawl often results in loss of farmland=
and wetlands. How will farmland losses affect rural economies and our n= ation=92s ability to produce food? How will wetland losses increase floo= ding potential and reduce water quality? How will the alternative plans = affect the ability of urban areas to meet Federal air quality standards?

Foreign Policy
Increased domestic oil production is likely to increase U.S. dependence = on oil from all sources, which would, in turn, increase the importance of= maintaining political stability in places such as the Persian Gulf. How= will U.S. foreign policy be affected by this situation (consider the Gul= f War)? How will the alternative plans affect treaty obligations, includ= ing, but not limited to, those which protect marine ecosystems and migrat= ory birds? 001

Public Lands Policy
How will the alternative plans set precedents for management of our publ= ic lands, particularly in regard to resource extraction from BLM, Nationa= l Forest, Bureau of Reclamation and National Park lands? How will such p= recedents affect managment of public lands for other uses, including recr= eation, wildlife habitat or wilderness? How will the Arctic National Wil= dlife Refuge be impacted by the alternative plans? Do the alternative pl= ans set precedents which make oil exploration in ANWR more likely?

Native Rights Policy
How will the alternative plans affect the protection of Native American = cultures, including subsistence lifestyles, in both the immediate area of=
NPR-A and also throughout the U.S.?

Respectfully Submitted,

Jonathan Green

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1926-001
With the exception of a discussion of how the alternatives might affect "the protection of Native American cultures, including subsistence lifestyles" in the NPR-A area (which is addressed in the IAP/EIS), the far-ranging analysis advocated in this comment is inappropriate. The Council on Environmental Quality advises that, "It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful." To assist decisionmakers and inform the public, it must be limited to "effects that can be evaluated meaningfully" (Council on Environmental Quality, 1997). The petroleum resources that might be found in the planning area are not anywhere near the scale that conceivably could have any meaningful impact on the broad national and global concerns mentioned in this comment.

1951

ALASKA COMMUNITY ACTION ON TOXICS
135 Christensen Drive, Suite 100
Anchorage, AK 99501
(907)222-7714

March 12, 1998

Mr. Gene Terland
NPR-A Planning Team
Bureau of Land Management, Alaska State Office
222 West 7th Avenue
Anchorage, AK 99513-7599

RE: Northeast National Petroleum Reserve-Alaska
Draft Integrated Activity Plan/ EIS

Dear Mr. Terland:

We wish to comment on the Draft Integrated Activity Plan/ Draft Environmental Impact Statement (DEIS) for the northeast section of the National Petroleum Reserve-Alaska (NPR-A) released by the U.S. Bureau of Land Management for public review on December 10, 1997.

Alaska Community Action on Toxics, a project of the Alaska Conservation Foundation, works with Alaska communities to eliminate the sources of toxic pollution that threaten environmental and human health. These comments will focus on our major concerns about sites of toxic pollution throughout the NPR-A that have yet to be adequately cleaned up decades after past exploratory operations and from former military operations in the planning area. We also find that the DEIS fails to adequately consider the environmental impacts of all significant sources of toxic air and water emissions and hazardous solid waste resulting from potential future oil exploration and development operations in NPR-A. These existing and future sources of pollution pose substantial risks to fish and wildlife habitats in the planning area and to human communities in the Arctic. Finally, we are dismayed that the environmental impacts from greenhouse gas emissions and their contribution to global climate change were not addressed at all in this DEIS.

We find that BLM has not done a complete analysis of a true alternative to the action as required by the National Environmental Policy Act. This should be the heart of the EIS-- and we find that this DEIS has no heart. The DEIS has not established the basis of need for new leasing for oil and gas development in the NPR-A. BLM must consider the alternative of energy conservation and renewable energy sources that could meet the national energy need and therefore preclude the need for fossil fuel development of the NPR-A. This Reserve should be held in trust until a true need for leasing and development can be established. In the meantime, the NPRA should be protected for its higher and better uses -- conservation of fish and wildlife habitat and subsistence use-- and long-term conservation of non-renewable resources. 001

2

We recommend that you indefinitely defer leasing and development and take action immediately to permanently protect the Teshekpuk Lake Special Area and Colville River Special Area (plus adding the Kogosukruk and Kikiakrorak Rivers). These Special Areas should be permanently deleted from leasing, along with all industrial facilities prohibited (including gravel mines, drill pads, pipelines, roads, causeways, docks, seawater treatment plants, processing or storage pads, and waste disposal facilities. 001

The stipulations designed to minimize impacts are woefully inadequate, especially with respect to operational features such as standards for air or water quality, drilling and other waste disposal, prevention of contamination, and rehabitation of the environment. The fundamental assumptions in the DEIS regarding the stipulations are fundamentally flawed. The DEIS states that "restrictions on development will not adversely affect the viability of potentially commercial discoveries," (DEIS, p. IV-A-26). Unless the government makes clear that it will have the right to strictly uphold the stipulations (even if oil exploration development at a certain time or place may be deemed by the companies as infeasible), their effectiveness in reducing environmental impact is in question. Therefore, application of the stipulations should not be factored into the analysis of environmental impact because this would most likely understate the potential effects. Furthermore, the list of instances in which all the stipulations can be modified or waived (DEIS, p II-27), as well as specific provisions contained in most of the stipulations regarding modification or waiver, are so broad and vague that we doubt whether they would ever be strictly adhered to. 002

Another fundamental flaw with the stipulations that puts in doubt their effectiveness is the fact that only 7 of the 82 stipulations listed would be included as conditions of proposed lease sales. The remainder would be applied at the permitting stage, including all the stipulations for management of production wastes, water use, and site reclamation. This is in sharp contrast to BLM's 1983 FEIS and Record of Decision in which most of the stipulations were to be contained as lease conditions, not permit conditions (although that FEIS and provisions for the leasing plan and land management were woefully inadequate, nonetheless). Our experience is that by the time a project reaches the permitting stage, the pressure to reduce the number and nature of stipulations is greatly increased. Therefore, we recommend that all the stipulations, and especially those pertaining to solid and liquid waste handling, and hazardous-material disposal and cleanup also be lease-sale stipulations. 003

The DEIS fails to adequately analyze impacts of new sources of hazardous and solid wastes. Because the impact analysis assumes that the stipulations would be strictly adhered to, despite the weakening language they contain, the DEIS overlooks entire categories of potential impacts. For example, stipulation #13b says that re-injection for disposal of muds and cuttings is the preferred method. If not required, then the impact analysis must assume that other methods could be used. If subsurface structures will not be suitable for re-injection, then other disposal scenarios need to be addressed. There is no requirement for monitoring of the reliability of environmental quality from the re-injection technique. There are no adequate provisions for the safe disposal of hazardous wastes. 004

Although stipulation 3 allows for incineration of solid waste combustibles, it fails to require certain air quality standards to be met. The DEIS fails to analyze how much solid waste would need to be disposed of from the exploration and development operations. What are the current practices in the Prudhoe Bay oil fields, how much field monitoring is carried out and for what toxic components? How reliable are the incinerators? What is the current disposal practice for this residual ash? What are the combustion products, potential exposure pathways and environmental and human health impacts? The document implies that incineration will happen on site, but there is no discussion under air quality of what the impacts from incineration would be. It is likely that incinerator ash could be toxic and that solid waste landfill could end up being contaminated. 005

Before new wells are drilled, clean up the old messes left behind.

Solid and Hazardous waste dumps. This DEIS fails to present a consolidated map with all hazardous and solid wastes that already exist in NPRA, nor to comprehensively determine the nature and extent of contamination problems or analyze the long-term environmental and human impact of the existing sites. This is of major concern because, as the document does reveal, "solid-waste landfills have been associated with virtually all of the drilling sites and USDOD sites." (DEIS, p. III-A-41). All old reserve pits and other drilling waste sites and buried Navy and Air Force waste dumps need to be inventoried, tested, and actually cleaned up (i.e. wastes removed). Although some of these sites could be found on maps from the USGS government exploration program (Fig. 2.20, Schindler, 1988), evidence of field inventory taken at the time of so-called cleanup and current environmental status (water quality testing results), as well as earlier information from the Navy operations at other sites should also be compiled. 006

The DEIS contains no information on the Navy's solid waste dumps or the existing environmental quality of these areas, nor is there evidence of an inventory of the wastes at these sites from earlier records (e.g. that are contained in the Navy. As well, cleanup of former military sites located within the plan area, such as the DEWLines, and Umiat Air Force Station where the Army Corps of Engineers is presently considering a Restoration Advisory Board (Arctic Sounder, March 27, 1997), should be integrated into management of this area. Furthermore, there may be additional contaminated sites at the runway sites where fuel spilled from fuel resupply operations in these areas.

Not all major sites within NPRA are listed (as they are outside the planning area), but some notable sites include Skull Cliffs and Cape Simpson. We urge you to clean up these old sites-- where toxic pollutants have been left behind for decades -- before new pollution sources are allowed within the NPRA.

The DEIS gives little information on the nature and extent of contamination present at each site it lists, nor the time frames for any on-going cleanup programs. Nor does it describe the standards for cleanup and environmental restoration of habitats, what sources of future contamination may remain in the environment even after "clean up" actions, and what disturbance or other impacts could be associated with cleanup operations.

Drilling waste dumps. The 28 USGS wells have never been plugged and abandoned, so there could be future spills resulting from these well-heads. This is ostensibly for research (permafrost studies by USGS) but it is not explained whether such research is indeed ongoing, and what environmental assessment was conducted related to this situation. This concerns us because we have heard that the Beaufort Sea coast is literally engulfing some of these wells, and this deserves further investigation and cleanup. Furthermore, there was not a close-out program conducted for the rest of the hundred or so wells that have been drilled throughout the NPR-A by the Navy. 006

The cleanups for the 28 USGS wells were incomplete and toxicity criteria or water quality parameters were exceeded at all sites. Past "close outs" of reserve pit sites by BLM/ USGS and approved the Alaska Department of Environmental Conservation were inadequate. All 28 old reserve pit sites in the NPRA which have been "closed out" exceeded the toxicity criteria or water quality standards for at least one characteristic (data from U.S. Geological Survey (USGS) 1992; BLM and USGS 1992).

Of these sites, ADEC approved 27 for close out, but required a 5 year monitoring study at the East Teshekpuk Lake site -- the one site that ADEC did not "close out". Although the DEIS says that this monitoring study was required (DEIS, P.III-A-41) there is no evidence that it has done. At many of these sites, the USGS contractors apparently dumped all kinds of trash and wastes into the reserve pits, then buried them.

At East Teshekpuk Lake the reserve pit is now eroding into the lake due to erosion (see attachment 1, from BLM/USGS 1992), exposing this formerly buried trash and drilling waste in critical fish and wildlife habitat. In its 1992 review of the reserve pit close outs, the U.S. Fish and Wildlife Service said, "the East Teshekpuk site has drill wastes dispersing into the lake at this time. Significant concentrations of metals and hydrocarbons were reported from many of the sites both in and out of the reserve pits. Simply declaring these sites closed and allowing the pit contents to disperse is unacceptable... We disagree with the USGS/BLM finding that risk to wildlife is negligible" (Sousa 1993). The Alaska Department of Fish & Game reported "at the East Teshekpuk well site, erosion along the shoreline of Teshekpuk Lake is actively removing contaminated material from the flare pit and the reserve berm," (Ott 1993). We understand that this site still has not been cleaned up despite the high wildlife values of the habitat, and that in fact, further erosion of the site is occurring that may allow even greater release of contaminants into the lake and wetlands.

The DEIS is very misleading where it says of the 28 USGS wells, "all of these wells have been cleaned of visible debris and revegetated." There is buried debris that remains. Furthermore, the effectiveness of revegetation at these sites is exaggerated. As you can see from the attached photos (Attachments 1-3; from BLM and U.S. Geological Survey 1992) little, if any, revegetation had occurred more than 10 years after drilling and there is no evidence that the situation is much changed now.

Direct, indirect and cumulative impacts of air and water pollution.

This DEIS fails to adequately consider the cumulative impacts of onshore and offshore oil and gas development in this region, as well as impacts on climate change, ozone depletion, and contaminants. 007

The DEIS contains no objective impact assessment criteria. It fails to provide objective criteria for defining the extent, intensity, and duration of effects on vegetation, fish and wildlife habitats and populations, subsistence, and other resources from many sources of toxic pollution likely to result from oil and gas exploration and development. Scientific justification for the criteria, as well as citations for impact levels, needs to be provided. 008

Pipeline Spills. Pipeline spill effects are inadequately described. The DEIS fails to make it clear that alternative pipeline routes are not considered, and that even the leasing alternative with the least acreage (Alternative B,) would still allow pipelines across the areas that are not leased. Pipelines crossing the Teshekpuk Lake area would be allowed in all leasing alternatives, even within the buffer zones around high-use goose-molting habitats. Yet the DEIS fails to fully analyze the habitat degradation caused by pipeline construction and both chronic and major spills of oil and other petroleum products for these areas, and for other fish and wildlife habitats. In addition to the effects of toxic pollution, surveillance for oil spills by daily aircraft could be a major source of impact that was not analyzed, oil spill response and cleanup operations would pose disturbance impacts from helicopter or aircraft access, and wetland habitats could be destroyed by bulldozing and other cleanup techniques. 009 010 011

Pipelines are an important source of impacts, contrary to statements made in the DEIS, because they are the most common source of spills in the North Slope oil fields: from ruptured lines, faulty valves or those left open, and a variety of other leaks (Alaska Department of Environmental Conservation, Oil spill database for 1996). More than 60% of these were crude oil and other hydrocarbons. The DEIS fails to list spills at Prudhoe Bay from the most commonly spilled product, diesel fuel, and other toxic or hazardous materials, and fails to estimate those types of spills for NPR-A. Spills of toxic materials are of great concern for fish habitats, goose feeding habitats, bird nesting areas, and subsistence use. In particular, diesel spills are of concern as this substance is acutely toxic to plant life, and studies of diesel spills in the Arctic have shown toxic components in the soil and little plant recovery after decades (Walker, Cate, Brown and Racine, 1987). Furthermore, the DEIS fails to identify potential environmental impacts from spills of substances besides crude oil, including hazardous materials. The entire oil spill analysis downplayed the potential risks of spills. 012

Air and water quality. The DEIS provides no data on expected mobile or permanent sources or concentrations of air or water pollutants from NPRA development, even though this information is essential for evaluating potential degradation of local and regional habitats. Throughout development across the North Slope, air and water quality permitting, and analysis of impacts, has been done in a piecemeal basis and has not been well integrated with other permitting analyses. 013

This deficiency is of concern to us because there is new scientific evidence that air pollution from Prudhoe Bay production facilities is significant, especially for methane, nitrogen oxides, sulfur dioxides, and carbon dioxide (Jaffe et al, 1991; Jaffe et al. 1995; Brooks et al 1997). A recent scientific study found that air emissions from Prudhoe Bay facilities greatly exceeded the amounts determined from models using fuel consumption rates (primarily natural gas disposition). For example, Brooks et al. (1997) measured levels of CH4 and CO2 at rates 4-6 times greater than had been calculated earlier by Jaffe et al. (1995). 014

Another recent study found mercury and other trace elements accumulated in snow in Prudhoe Bay (Synder-Conn, et al. 1997). Elevated levels were found downwind of a Prudhoe Bay oil field production facility, ARCO's central gas compression plant and central gas facility, the largest gas-handling facility in the world, (aluminum, barium, calcium, iron, nickel, and varadium) and a major solid waste incinerator (antimony, cadmium, copper and lead). Although sample sizes were small, this study found that "the mercury concentration is also of particular concern, since the concentration exceeds federal and state water quality standards for the protection of aquatic life. The high correlation of mercury with aluminum, barium, calcium, and other drilling fluid-related elements means that mercury could be of widespread concern in the oil field." (Snyder-Conn, 1997, p.208). These cumulative effects to air quality were not addressed in the DEIS. Air emissions from Prudhoe may already be substantially and adversely affecting human health (with significant increase in respiratory diseases such as asthma correlated with deposition of airborne pollutants from the Prudhoe Bay industrial facilities. This is a particular concern that was raised during NPR-A and Alpine oil field permitting public meetings in Nuiqsut, yet the direct and cumulative effects of air pollution on human communities or wildlife were not addressed in the DEIS. 015

The DEIS improperly defers discussion on these impacts by stating that, "*the USEPA issues NPDES permits required by the CWA. In order to provide information for these permits, any future NEPA document would describe existing water quality and the quantity of water requirements for the proposed project; expected pollutants and their concentrations; and the quality and locations of wastewater treatment facilities and discharges... The USEPA also issues Prevention of Significant Deterioration (PSD) air-quality permits required by the CCA, while the ADEC issues other air-quality permits. A future NEPA document would provide an analysis of meteorological factors and air-quality baseline conditions and predict impacts to air quality during construction and operations....*" (DEIS, p.II-38.) Deferring a substantive discussion of air and water quality impacts in this manner represents an unacceptable segmentation of the NEPA analysis. Failure to provide information on these impacts in turn impinges on the ability of BLM and the public to make a reasoned judgment about a final course of action for management of the northeastern NPR-A. Efficacy of risking the environmental harm for access to an unknown quantity at this stage does not give adequate information upon which to base the current decision. 016

Greenhouse gases. New scientific evidence that the existing North Slope oil fields are a significant source of greenhouse gas emissions has been ignored and no analysis of the cumulative effects of the NPR-A development-- along with the existing oil production-- has been provided. 017

017 We are disappointed that the extremely germane issue of global climate change was not addressed at all in the DEIS. This issue is integral to assessment of cumulative impacts on the Arctic environment also to the determination of the public interest regarding how this action addresses NPR-A's stated purpose in meeting the total energy needs of the nation. This action is connected to our national energy policy, how we meet the national energy need over the long-term, and also how the U.S. fulfills its commitments made at Kyoto on global climate change.

018 Oil and gas exploration and development in NPRA would result in new sources of greenhouse gas emissions on the North Slope (from vehicle use, production turbines, gas injection facilities, and other sources) and also during consumption of the resulting petroleum products.

New scientific research shows that carbon dioxide and other emissions from the Prudhoe Bay oil fields are a significant source of greenhouse gases. Measurements taken downwind from 90% of the major oil field production facilities in Prudhoe Bay found concentrations up to 45 ppm above ambient levels (Brooks et al. 1997). Brooks estimated yearly emissions based on the direct measurements taken during their study to be 11.4 million metric tons (C) year -1. Brooks et al 1997 found that the measured emissions were four times greater than the total carbon emissions reported by the oil producers for the same months as the time period measured, and six times greater than the combustion emissions assumed by Jaffe et al in J. Atmos. Chem. 20 (1995), 213-227, based on oil facility fuel consumption data collected in 1989. Brooks et al. 1997 concludes that there "may exist large carbon dioxide sources at the oil fields that are unrelated to the reported fuel consumption rates." This study also speculates that if depressurization of water retrieved with the extracted oil results in discharge of dissolved CO_2, then increasing emissions will be expected as water extraction increases with aging of oil fields.

Since there is evidence that existing North Slope facilities are a major source of greenhouse gas emissions, and the development of NPR-A could further increase the levels, this issue must be addressed in the DEIS. The cumulative effects of greenhouse gas emissions from exploration and development in NPR-A in combination with all other reasonably foreseeable onshore and offshore Alaska Arctic oil development projects should be analyzed in the DEIS.

019 BLM's intent to lease and develop NPR-A is directly at odds with President Clinton's first steps to address climate change. In December 1997, the U.S. signed an international treaty at Kyoto, which included commitments to stabilize greenhouse gas emissions at 1990 levels. Expanding oil development into NPRA counters any real gain we make in the nation to reduce our carbon emissions. Climate change stems from the exploration, development, production, and combustion of fossil fuels. BLM must acknowledge the vulnerability of the Arctic to impacts from climate change and the serious impacts already manifesting from climate change in the Arctic.

Ironically, the Arctic stands to lose the most, not just once, but twice. In addition to the direct damage to wilderness and wildlife habitat and the cumulative effects of onshore and offshore exploration and drilling, the Arctic is one of the reginns most vulnerable to climatic change. There is strong evidence that suggests that global warming is already occurring. For instance, Alaska Natives have observed such changes in the environment through their traditional

knowledge of Arctic ecosystems, while university and government research reinforces those observations (Center for Global Change and Arctic System Research 1997). 019

People have noticed in recent years a reduction of pack ice, more open water and thinner ice, which corresponds with satellite data showing a decrease of 5% in sea ice extent in the Bering Sea from 1978 to 1994. Drier summers have led to the loss of important vegetation for both humans and wildlife. There has been more coastal erosion from increased storm activity, resulting in threats to coastal communities. Spring is arriving earlier and the fall arriving later, disrupting patterns of migratory wildlife, such as caribou and waterfowl. The future of effects of climate change are of grave concern to human communities living in the Arctic, and reducing our emissions of greenhouse gases is also in the public interest of all Americans.

Sincerely,

Pamela K. Miller

Pamela K. Miller
Project Director

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1951-001
Please see Responses 1851-002 and 1851-058.

1951-002
The stipulations presented in the IAP/EIS are based on an extensive review by Federal, State, and local resource experts. The BLM believes these stipulations are appropriate to help protect the environment by reducing the potential environmental impacts associated with oil and gas development.

The cited quotation from Section IV.A.26 that ". . .restriction on development will not adversely affect the viability of potentially commercial discoveries. . ." only provides the reader with the basis for certain resource estimates. It has nothing to do with BLM's plans for enforcement of stipulations and permit conditions. Stipulations and permit conditions will be strictly enforced by the BLM in consultation with Federal, State, and NSB regulatory and resource agencies. Please also see Response 1194-010.

The language in the first part of the exception clause, "technically not feasible," "economically prohibitive," admittedly is broad and necessarily so. The prescriptions detailed in the Preferred Alternative stipulations are based on best available information. It is unrealistic to expect that the planning team should be able to draft a set of stipulation that covers the universe of possible circumstances existing today or likely to occur in the future. Given the changes that have occurred in oil field practices over the last 20 years, we anticipate that new and innovative technologies will be developed, material and facility designs will improve, and our knowledge about our environment and specific resources significantly will increase. In addition to the broad criteria described in part 1 of the modification provision, part 2 requires that a proposed alternative fully satisfy the objectives of the original stipulation. This two-part exceptions criteria gives BLM the flexibility to adapt to new and changing conditions yet ensures that environmental protection objectives will be fulfilled.

See also Reponse 1664-027.

1951-003
All Preferred Alternative stipulations will be attached to the lease.

1951-004
The impact analysis correctly assumes that the BLM intends to strictly enforce adherence to all stipulation and permit provisions in the planning area. The BLM also intends to cooperate and work with other appropriate Federal, State, and NSB regulatory and resource agencies, local communities, and industry to ensure full compliance with all stipulations.

The criteria to grant an exception or modify a stipulation (Sec. II.C.7, Stipulations) are listed after the preceding introductory paragraph. The criteria require that the proposed alternative fully satisfy the objectives of the original stipulations. Please also see Response 1194-002. Given this requirement, there are no additional categories of potential impacts left unanswered by the EIS.

Preferred Alternative Stipulation 4 addresses specific concerns regarding Alternatives A through E Stipulation 13b. The stipulation requires injection of all pumpable solid, liquid, and sludge waste, including muds and cuttings. Furthermore, the stipulation includes flexibility for on-pad storage of muds and cuttings as necessary to facilitate annular injection and or backhaul operations.

Injection of muds and cuttings and disposal of hazardous wastes are regulated by Federal and State laws. Site-specific disposal permits will be required and issued by the appropriate Federal and State regulatory agencies. Permits applicable to oil and gas operations are listed in Table II.F.1.

1951-005
Alternatives A through E Stipulation 2 requires that the incineration of all solids and sludge be carried out in

accordance with USEPA, State of Alaska DEC, and the OSHA regulations and procedures. This includes meeting established air-quality standards in the disposal of any solid waste produced during incineration. Any hazardous wastes that might be produced will be reduced, handled, treated, and/or removed in accordance with existing regulations and procedures (see Alternatives A through E Stipulations 1, 3, 4, and 5).

1951-006
Please see Responses 1669-025, 1671-008, and 1799-001.

The statement in Section III.A.1.g, Hazardous Materials, "solid waste landfills have been associated with virtually all of the drilling sites" is incorrect and has been changed. The statement is accurate only in reference to long-term DOD sites.

Two DOD sites within the planning area have been put on a cleanup schedule by the U.S. Army COE. Cleanup begins in 1998 at the Kogru DEW line site with the removal of 500+ bags of contaminated material, and the demolition of the remaining warehouses and composite buildings. The 500+ bags will be removed during the winter 1998-99 overland move season. Site restoration will include the placement of soil berms around the concrete foundations of the buildings and revegetation of the gravel pad. The contractor in charge of operations at the Kogru DEW line site will excavate 200 cubic yards of PCB and petroleum-contaminated soils from Umiat (State land). The Umiat project should be completed by July 1998. The Cape Simpson DEW line site is outside the planning area and under the jurisdiction of the North Slope Borough. During 1998, the same contractor working at Kogru and Umiat will remove buildings, petroleum-contaminated soils. and other debris by barge.

The Lonely DEW line site still is a military site (not a "former"military site). The site is managed by the U.S. Air Force under a right-of-way agreement with BLM. The Air Force is responsible for identifying and removing any on-site contamination. This same rule applies to all active military and formerly used defense sites.

All oil and gas exploration-related reserve pits have been tested. The data are available in the USGS Water Resources Division Report *Environmental Status of 28 Oil and Gas Exploration Areas of Operation in the National Petroleum Reserve–Alaska, December 1992*. The ADEC has accepted closure on all but two of these sites. The USDOD-related sites are being inventoried by the COE. The BLM is working with USGS to resolve outstanding waste and well condition issues.

Section III.A.1.f.(1)(c) clarifies the current status of the 28 USGS exploratory wells that have deep permanent plugs generally at about 2,000 ft. All zones of petroleum fluids pressure are isolated from the surface environment by the plugs. All of the USGS wells have Christmas tree valve (abandonment head) assemblies at the surface. This allows a small valve to be opened for temperature measurement. The research is being used to detect climate changes that might affect permafrost. The ongoing research is related to measuring the earth's temperature. The environmental assessments for the sites allowed for this approach to closure.

The East Teshekpuk reserve pit is the only known site where trash was buried in the pit. Beginning in about 1989, erosion accelerated and the pit, including trash (garbage, paper, cloth, and metal), began washing into the lake. East Teshekpuk is one of two sites where the ADEC did not accept closure and requested that the USGS and the BLM develop a plan for the site. The commenter's use of "drill wastes" is not accurate. Well site Areas of Operation are under the purview of the USGS. The BLM is working with the USGS to fulfill the ADEC request. The BLM is unwilling to accept the well sites back until ADEC has approved closure. The commenter's statement that USGS contractors may have "dumped all kinds of wastes in to the reserve pits" is inconsistent with the work the BLM has seen done.

The statement in the EIS that "all of these wells (28 USGS exploratory wells) have been cleaned of visible debris and revegetated" was not intended to be misleading. The text has been changed.

Small amounts of debris still may be buried at the sites. However, no "dumps" or large quantities of debris are at the sites. The BLM never maintained the belief that a compacted gravel pad would become fully revegetated. An active cleanup and revegetation program on the 28 well sites was made by the USGS and its contractors. Revegetation occurred where it could logically occur. Natural processes continue to take over from the human-engineered processes; revegetation is different at each location or site. True to the research by USGS and the exploration program, each year the well sites took on differing designs. For example, the shallower wells required smaller drilling rigs and smaller camps, therefore, covering a smaller footprint. They completed the work in less time, allowing for a single season of drilling operations. The deeper wells, requiring longer drilling periods, had larger drilling rigs with larger camps with a correspondingly larger footprint and longer life. Wells drilled during winter and summer seasons required gravel work pads and gravel airstrips. Today, well sites normally are drilled in a single season without reserve pits and, like most of the NPR-A wells, use single-season ice airstrips.

The BLM has found gravel runways helpful to the continuing management of the NPR-A and continues to base resource management activities on them. The BLM is working to establish a program of continuing research in the NPR-A. Two of those researchers—Gary Clow, USGS, who is involved in the well site temperature program. and Jay McKendrick, Palmer Research Center, who is studying revegetation on the well sites.

1951-007
Please see Response 1851-025 regarding the concern about the adequacy of the description of the cumulative-case impacts. Concerns about changes to the climate and atmosphere changes are addressed in Section III.A.4. Contaminants cover a broad range of substances, and oil is considered the most likely contaminant to be spilled. The effects of oil spills are analyzed in Sections IV.B through H for the physical, biological, and sociocultural resources (in and adjacent to the planning area) that might be affected.

1951-008
The environmental consequences of all alternatives on each resource have been assessed using available scientific studies. The extent and precision of information on impacts varies among resources on the North Slope. Consequently, the BLM is able to provide relatively precise assessments of possible impacts on some resources and, in other cases, BLM has to rely on professional judgment. The impact assessment benefitted from peer review from outside the BLM and the MMS before issuing the draft IAP/EIS. Also, the final IAP/EIS will benefit from comments submitted on the draft IAP/EIS.

1951-009
Pipeline construction techniques (Sec. IV.A.1.b(6)(d)) have been developed to reduce the impacts on the environment. See also Preferred Alternative Stipulation 38. The techniques include routing pipelines to avoid lakes, installing pipelines on vertical support members (VSM's), and performing construction in winter to avoid damaging the tundra. The effects of pipeline construction and operations on vegetation, soils, and fish and wildlife resources are discussed in Section IV.C of the EIS. The effects of small chronic oil spills and large spills on these resources are discussed in Sections IV.C and M.

See also Responses 1660-085 through 088.

1951-010
Please see Response 1664-014.

1951-011
The effects of spills on vegetation, water quality and resources, and soils are analyzed in Section IV.C of the IAP/EIS; these resources are all components of wetland habitats. These analyses are based on crude oil spills as estimated in Section IV.A.2.a (1) of the EIS. These estimates indicate 99 percent of all spills are

≤25 bbl in size and 56 percent of all spills are ≤5 gallons. Also, 65 to 80 percent of all spills occur on pads and have no effect on the environment. Spills in the winter, when the wetlands are frozen, are not likely to affect the environment. Therefore, most spills are not likely to result in heavy equipment use-related damage to the environment. Effects of a large oil spill on vegetation, water quality and resources, and soils are analyzed in Section IV.M of the EIS. The chance of a large spill is low and two scenarios have been hypothesized; a well blowout of 34,000 bbl and a pipeline rupture of 2,800 bbl.

1951-012
We recognize that pipeline spills are a source of impacts. A quantitative oil-spill analysis of pipeline spills was not possible because of ADEC's database structure. A small qualitative discussion indicating actual was included where pipeline spills were actually indicated in the database. This was not meant to imply that these were the only pipeline spills on record. We assumed the estimated number of spills could occur from platforms, pipelines or flowlines. Refined oil includes aviation fuel, diesel fuel, engine lube, fuel oil, gasoline, grease, hydraulic oil, transformer oil, and transmission oil. Refined oil spills are addressed in Section IV.A.2.b and Table IV.A.2-6.

A reasonable and forseeable criteria is used to estimate oil spills. The pattern of past oil spills is used and applied to what is reasonable and forseeable in the future. The MMS typically uses the mean spill size as an indicator of reasonable and forseeable. However, in the case of the North Slope of Alaska, the mean spill size was less than half a barrel. Instead of the mean spill size, the average spill size of 4 bbl was used to approximate the effect of spills on the North Slope of Alaska.

Wherever the original database base structure provides for rigorous statistical analysis, a quantitative oil-spill analysis is performed. Alaska North Slope oil-spill rates are estimated without regard to differentiating operation processes. The ADEC database base structure does not facilitate quantitative analysis of Alaska North Slope oil-spill rates for platforms, pipelines, or flowlines. When a quantitative oil-spill analysis is not possible, the patterns of oil spills are qualitatively based on information from the ADEC database.

1951-013
Please see Response 1851-019.

1951-014
The BLM believes that there are questions relating to the amount of CO_2, methane and other greenhouse gases that originate from oil and gas development. The BLM will carefully consider such information in permitting the development of newly-discovered resources in the NPR-A. Furthermore, BLM will require, to the extent feasible, that the latest scientific information be considered, and the most recent technology be used to minimize emissions and reduce the contribution of such gases to the global atmosphere. Please see Section 4.b.1 in the final IAP/EIS. Also, please see Responses 1951-017 and 1851-029.

1951-015
The quote from Snyder-Conn et al. (1997) is taken out of context. The statement continues: "However, our mercury results were based on a single sample at each site; additional sampling is needed before any conclusions are drawn." The findings of Snyder-Conn et al. (1997) of elevated trace metals in snowpack near Prudhoe Bay are included in the cumulative impacts (Sec. IV.H.4).

1951-016
No attempt is implied to defer discussion of air- or water-quality impacts. Additional impact analyses required for site-specific activities, such as exploratory drilling and oil field development, are described in Section II.F.5 and Table II-F-1.

1951-017
Global change is addressed in Section III.A.4.

The BLM believes that it is unlikely that operations in the NPR-A significantly will alter changes currently projected to occur in the earth's atmosphere. Likewise, BLM believes that because of the limited scope and time of any operation, a change in climate would have only minor effects on operations. In Sections III.A.4.a.(1) and III.A.4.a.(3), the earth's climate appears to have been highly variable in the past, especially in northern areas. However, other climatic influences may diminish or augment the greenhouse effect during the time of the proposed management actions. Should the climate change at a more rapid rate than currently anticipated, warmer or thawing permafrost may become a concern, and engineering and design plans would be modified. If so, operational changes might be required to ensure that environmental disturbance is kept to a minimum.

Development of a major oil field within the NPR-A would produce and release into the atmosphere a certain amount of CO_2, methane, and perhaps other greenhouse gases. The amount released is not expected to be greater than similar-sized oil and gas operations in other parts of the world. If oil and gas (Sec. III.A.4.b.(1)) are not available from the study area, additional resources likely will be found and developed elsewhere. The ultimate effects on the earth's global atmosphere will be similar. Local environmental effects of the release of any greenhouse gases are expected to be minimal and of short-term duration.

The BLM supports efforts to stabilize and reduce greenhouse-gas emissions. The BLM also recognizes the need and the efforts to develop renewable alternative sources of energy to replace fossil fuels. However, the technology is not developed to the extent necessary to significantly reduce the current use of fossil fuels. Oil and gas resources currently provide a better source of energy (in terms of greenhouse-gas emissions) than do some resources, such as coal. Gas is better than oil in this sense. The technology for liquefying this resource and making it more transportable is making significant progress. Ultimately, economics will play a large role in whether fossil-fuel resources will be developed in the NPR-A. If advances in renewable energy resources occur, it might not be economical to develop these resources.

However, our Nation must continue to balance the impacts of fossil-fuel development with the impacts of other resource development. For instance, damming rivers and developing hydropower can have significant impacts on the biological productivity of our aquatic ecosystems. Such impacts must be balanced against the impacts of fossil-fuel development in planning our Nation's energy future.

1951-018
Please see Response 1851-014.

1951-019
Please see Response 1951-017.

1982

10 March 1998

NPR-A Planning Team
Bureau of Land Management
Alaska State Office
222 West 7th Avenue, # 13
Anchorage Alaska 99513-7599

To Whom It May Concern:

I have been following political and bureaucratic discussions as they relate to the development and use of the Arctic Slope of Alaska. I am concerned that decisions makers may lose sight of the long term value of that region to satisfy short term goals. Therefore I am writing this letter.

I have personally done research on the North Slope, primarily on the Colville River and its tributaries with my first visit there in 1964. My longest tenure there was for four and a half consecutive months. My initial exposure to that area, other than through the literature, was as a researcher for the University of Alaska while a graduate student. During that first year however, I was fortunate to travel in helicopter with several geological parties as they went about the work of measuring and sampling cliffs along the Colville drainage. I have repeated such travels over the years, but not with geologists, and feel that I know the North Slope rather intimately with my last trip there in about 1992.

I currently as a Professor of Zoology with a Ph.D. in Zoology. I did graduate work at the University of Alaska and University of Utah. I was an instructor and curator of birds at the University of Kansas in 1975 and was a research fellow and instructor at Cornell University from 1968-1970. I was recruited for a temporary one year position with the Environmental Research and Development Administration (ERDA) (currently Department of Energy) in 1975, during the midst of arctic oil development, because of my knowledge of that region. My focus of research is with birds of prey and that region offers one of the worlds prime concentrations of predatory birds. I well remember my first readings about the incredible concentrations of them in the Philip Smith and J.B. Mertie, Jr. 1930. Geology and Mineral Resources of North-western Alaska. USGS Bull 815. Nothing has changed my perception over what I gained from them through the years. The Colville River drainage serves as a core focal region for most of Alaska's tundra peregrine falcons (*Falco peregrinus tundrius*), a subspecies that ranges throughout the tundra eastward to Greenland. I described and named that subspecies in 1968 (see Auk 85:179-191, 1968).

There are several points I will make that I think are imperative:

1. It is very important that wildlife be guarded from disturbance and that no oil leasing should be allowed within the Colville Passerine, Raptor, and Moose LUEA as has been proposed in one Alternative, I think it is Alterative B. 001

2. That area mentioned above should be expanded some 3-4 miles in width and no leasing should be permitted within that expanded region either.

3. A long term management plan for the entire Colville River Special Area, if not the entire Colville watershed, should be developed before leasing is allowed. This should be done by a group of persons knowledgeable with raptors rather than a committee assigned from within the Bureau. 002

4. The Colville watershed has at least two very important rivers that enter from the coastal plain side of the Colville rather than the Brooks Range, the Kogosukruk and Kikiakrorak Rivers, that should also be included within the Special Area. 003

5. There should be lengthy discussions about designating the Colville and adjacent regions (namely Utokok Uplands, Colville River and Teshekpuk Lake) as a Wildlife Refuge or given other special designation prior to any leasing.

My biggest concern is that knowledge rather than short term economics drive the decisions that are made. I would more that willing to assist in that task in any manner that I can.

Sincerely yours

Clayton White

Clayton M. White, Ph.D.
Professor of Zoology and
Curator of Ornithology

1982-001
This comment was factored into decisions regarding the Colville River and its tributaries in the Colville River Raptor, Passerine, and Moose Habitat LUEA. The Preferred Alternative allows leasing in the area, but prohibits nearly all surface occupancy associated with oil and gas development within 1 mi of the bluffs or banks of this area. It also includes a special consultative provision for an area 2 mi around these bluffs, a provision to recommend that the Secretary of the Interior expand the Colville River Special Area to encompass areas approximately 4 mi wide along tributaries significant for raptor habitat, and a provision to develop a Colville River Management Plan to address multiple surface resource concerns, including protection of raptor habitat. Finally, the Preferred Alternative recommends working with other landowners to create a Bird Conservation Area.

1982-002
The Preferred Alternative calls for a Colville River Management Plan for the Special Area, including some areas proposed to be added to the Special Area largely because of their value for raptor habitat. In addition, we intend to conduct a raptor workshop to review the scientific literature on disturbance to raptors and to identify potential additional mitigation measures preliminary to developing the plan. The participants in the workshop as well as in the Colville River Management Plan team will extend beyond BLM personnel.

1982-003
The Preferred Alternative recommends adding portions of the Kikiakrorak River, the Kogosukruk River, and tributaries of the Kogosukruk important for raptor habitat to the Colville River Special Area.

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1987

From: Michael Williams <mwilliams@chugach-ak.com>
To: Gene Terland (E-mail) <gterland@ak.blm.gov>
Date: Thu, Mar 12, 1998 3:59 pm
Subject: Northeast National Petroleum Reserve -Alaska/Draft EIS

This message is in MIME format. Since your mail reader does not understand this format, some or all of this message may not be legible.

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Content-Type: text/plain

Dear Mr. Terland

Chugach Alaska Corporation Supports Option E of the draft EIS to allow unrestricted leasing of high potential oil areas in the National
Petroleum Reserve Alaska. We oppose creation of any special set-aside areas for protection in advance of even preliminary exploration. We support appropriate environmental mitigation measures as identified by scientific studies of areas identified to have oil or gas development potential. We also encourage BLM to proceed with lease sales in the summer of 1998

Yours truly

Michael F. G. Williams
Vice President

1988

From: Linda Moore <linda@afognak.com>
To: ilmakcso.ilmakdsl(gterland)
Date: Thu, Mar 12, 1998 8:42 am
Subject: National Petroleum Reserve Alaska

3/12/98
To: Gene Terland, BLM

From: Jim Carmichael (jecarmic=40ptialaska.net)
Marketing Director
Afognak Native Corporation, Kodiak, AK 99615

RE: National Petroleum Reserve * Alaska (NPR-A)

We would like to voice our support for Alternative E which will allow = leasing of all BLM lands under consideration in the Draft Environmental =
Impact Statement.

We feel that Alternative E is the best option in the DEIS as it reflects =
Congress=27s principal objective which was to promote development of the = petroleum resources. Full leasing of the area will add some measure of = certainty to oil and gas exploration investors which would mean significan= t potentials of revenue to the State and jobs for Alaskans. The operationa= l guidelines in these stipulations adequately protect the fish and = wildlife and their habitat while allowing for oil and gas development. = Alaska has worked hard to maintain a balance between development and = preservation and Alaskans support oil and gas development which they feel = have had positive benefits to their State and communities.

We do not support the creation of new =22Special Areas=22 in Alternative =
E. We believe environmentally safe development is possible in almost any = location .

We encourage BLM to move forward with a lease sale in 1998, as Alaska=27s = economy may rely totally on new discoverics of oil and in gas in the very = near future. The re-leasing of this area should not preclude oil and gas = development on the Coastal Plain of ANWR.

Thank you for this opportunity to comment.

Alaska Management Consultants

2001

March 5, 1998

Mr. Bruce Babbitt, Secretary
Department of the Interior
United States Government
c/o Ms. Deborah Williams
Special Assistant - Alaska
1689 C Street
Anchorage, Alaska 99501
271-5485
271-4102 Fax

Dear Secretary Babbitt,

This letter is in response to the Northeast National Petroleum Reserve - Alaska (NPR-A) Draft Integrated Activity Plan/Environmental Impact Statement for 4.6 million acres of public lands.

I recommend that no lands be used for oil and gas exploration and development activities in the NPR-A area. This recommendation is based on information within the E.I.S. that demonstrates that activity could be detrimental to marine mammals, specifically polar bears. The recommendation is also based on legal precedents including the Marine Mammal Protection Act of 1972 and the International Agreement on the Conservation of Polar Bears, the paucity of current scientific studies in the E.I.S. and the lack of ecosystem analysis in the E.I.S.

A. EFFECTS OF OIL AND GAS EXPLORATION AND DEVELOPMENT ON MARINE MAMMALS ACCORDING TO THE DRAFT E.I.S.

I. Effects of noise and disturbance on marine mammals.

Noise associated with oil and gas activities would be a main source of disturbance to polar bears. One primary source of noise and disturbance would come from the air traffic along the coast. Helicopters would certainly disturb polar bears along their coastal habitats.

II. Effects of seismic activities on marine mammals.

Seismic surveys conducted near the coast could expose polar bears to seismic activity. This activity could lead to the death of polar bears, 001

Karen Christine Cameron, President • (907) 248-8421 • Fax (907) 277-8007
Suite #450 • 3705 Arctic Blvd. • Anchorage, Alaska 99503-5774

the displacement of maternal polar bears and their cubs, could lead to the abandonment of their den sites and the loss of a number of cubs. 001

III. Effects of oil pollution on marine mammals.

Some of the crude and fuel oil spills associated with oil and gas exploration and development activities which have been assumed to occur may reach the marine environment and can potentially effect marine mammals.

IV. Effects of oil and gas exploration and development camps on marine mammals.

Camps may attract bears and this could result in the shooting of bears that learn to associate humans with food sources. 002

V. Effects of oil and gas activities on Marine mammal - polar bear - dens.

Pregnant and lactating females and newborn cubs occupy winter dens for extended periods. Pregnant females come to coastal areas in late October or early November to construct maternity dens. Some dens have been located over 100 miles inland in Canada. Offspring are born from early December to late January. Females and cubs emerge from dens in late March or early April. Because the locations of dens vary from year to year, it is possible that dens could be disturbed by overland moves, traffic, noise, exploration and development operations. This could result in the loss of polar bears and polar bear cubs. 003

Oil and Gas exploration and development activity could be detrimental to marine mammals, specifically polar bears, within NPR-A.

B. RECOMMENDATIONS

I. That adherence to the Marine Mammals Protection Act of 1972 be ensured. 004

II. That decisions regarding NPR-A be in conformance with the International Agreement on the Conservation of Polar Bears of 1976, Canada, Denmark, Norway and the United States, regarding the protection of habitat components such as denning, feeding sites, and migration patterns.

III. That NPR-A plans adhere to the intent nf the Bilateral Agreements between the United States and Russia regarding the conservation of polar bears in the Chukchi and Bering Seas. 004

IV. That the conservation oriented "stipulations" contained in the E.I.S. be implemented, whether or not there is oil or gas exploration or development.

V. That a review of scientific literature be conducted and utilized for the development of alternatives which should be based on current scientific information. Much of the scientific literature cited in the report is outdated. Regarding marine mammals, old articles are cited such as Kolenosky, 1983; Jonkel, 1972; Amstrup, 1983, etc. There are references listed in the text, such as "Harington, 1968" that are not cited in the index. The science of marine mammals has changed considerably in the past fifteen/twenty years. This geographic area deserves to be analyzed with current data. 005 006

VI. That the E.I.S. approach be holistic. For example, rather than having the analysis divided into "Noise, Seismic, Pollution" areas it could address an analysis of the geographic area as an ecosystem. It is estimated that there are between 1,300 to 2,500 polar bears in the Beaufort Sea area, however migration patterns and corridors are not addressed in this E.I.S. The E.I.S. does not appear to focus on habitat feeding sites, nor natural systems which are well documented, nor does it address the value of sustainability. 007

VII. That greater precision in language, logic, and data be utilized in the E.I.S. For example there are scientifically and pragmatically unsupported statements and claims in certain sections of the E.I.S. which are then referred to and quoted repeatedly throughout the report to substantiate new unfounded statements. A specific example is: "Small onshore crude and fuel oil spills associated with Alternative C are not expected to reach the marine environment and affect marine mammals." This is not substantiated and yet it is quoted in future portions of the report. If one does not refer back to earlier unsubstantiated conclusions, one might assume that newer conclusions are accurate, when they may not be. 008

VIII. That exact mitigation measures be specified, have the force of law, be monitored, enforced, and upheld with stringent penalties, and periodically evaluated to protect the ecology of the area for marine mammals. 009

Until there is a comprehensive search of current scientific studies, an analysis of systemic and cumulative effects and a willingness to adhere to existing legal precedents, no lands should be made available for oil and gas exploration and development in NPR-A.

Thank you for your consideration of these matters.

Best regards,

Karen C. Cameron

cc: Tom Allen, Director
Bureau of Land Management
State of Alaska
222 West 7th Avenue
Anchorage, Alaska 99513
271-5076
271-4596 Fax

2001-001
The number of polar bear dens, females, and cubs disturbed, displaced, and/or killed due to seismic surveys conducted near the coast would be few, and seismic activities would be prohibited near known bear den sites (see Sec. IV.B.9.b, Marine Mammal, and Alternative A through E Stipulation 20a).

See also Preferred Alternative Stipulation 24a.

2001-002
Under current regulations, and lease stipulations, industry camps are required to properly dispose of food wastes, so that attraction of bears will not occur. However, a few bears may be attracted to camps because of food odors. These bears may have to be killed or removed from the area, but the number of bears lost is expected to be small and not affect the population.

2001-003
Although polar bear dens located in Canada have been located far inland, all recorded polar bear dens in Alaska were located within 25 mi of the coast or offshore of the coast. Overland moves near the coast could disturb denning polar bears, but the number affected would be small (see Responses 2001-001 and 2001-002).

2001-004
The Federal Government will adhere to the Marine Mammal Protection Act, and lessees will be required to conform to the law's requirements. Adherence to this law will ensure conformance with the international agreements cited by the commenter.

2001-005
Alternatives to the proposal are based on oil-resource potentials of different parts of the NPR-A and distribution of wildlife resources and habitat values. Some of the scientific literature is dated but still valuable. Recent information on polar bears also is used in the draft EIS, as listed here: Amstrup, 1995; USDOI, FWS, 1995; Amstrup and Garner, 1994; and USDOI FWS, 1997.

2001-006
The text has been changed in Section III.B.5.b.(4), Polar Bear, in response to this comment.

2001-007
The potential effects of the proposal would occur primarily onshore of the NPR-A. The draft EIS is organized by resources potentially affected and by types of activities and perturbations. An ecosystem approach would lack the focus on particular issues that concern Native people who would be most affected by NPR-A oil development. Effects on the polar bear population in the Beaufort Sea would be very local in association with potential disturbance of a small number of dens that occur onshore of the NPR-A. Most polar bear denning in Alaska occurs offshore on stable ice. Migration patterns and corridors of the polar bear population occur offshore of the NPR-A and would not be affected by the proposal. The small number of polar bears (perhaps ≤10) potentially affected by the proposal wouldn't be of consequence to the sustainability of the Beaufort Sea population of 1,300 to 2,500 bears.

2001-008
The BLM had cited appropriate sources for its conclusions wherever possible. Corrections of this type have been made in this document in response to specific comments on the draft IAP/EIS. The very small crude-oil spills averaging only 4 bbl and refined-fuel spills averaging only 29 gallons are likely to be spilled on the tundra or in shallow ponds-lakes that do not drain into marine waters. Under Alternative C, oil and gas exploration and development primarily would take place far inland from the coast; and the chances of any of these small spills reaching the marine environment would be nil.

2001-009
Because proposed NPR-A development would involve almost exclusively onland activities, most threats to marine mammals, including polar bears, are very remote or nil. Potential lessees (oil companies) and their contractors are require to adhere to all current environmental laws and regulations that pertain to marine mammals and other natural resources. Activities that might disturb polar bears denning on land would be required to get Letters of Authorization as required under the Marine Mammal Protection Act to minimize disturbance of bears and dens that may be located near where industrial activities are proposed to take place. Under this Act, the lessees must demonstrate that their actions would not significantly affect polar bears or other marine mammals that might be in the area of activities.

The Preferred Alternative includes creation of an Interagency Research and Monitoring Team to design and implement a coordinated research and monitoring program for the planning area. In addition to the stipulations for the Preferred Alternative, lessees also will be required to comply with site-specific stipulations and conditions identified during permitting and drilling plan reviews. For a discussion of enforcement, see Response 1194-010.

GENE TERLAND, NPR-A PLANNING TEAM
Bureau of Land Management, Alaska State Office
222 West 7th Avenue
Anchorage, AK 99513-7599

2042

I strenuously oppose oil leasing in the National Petroleum Reserve-Alaska. First, Teshekpuk Lake and Colville River Special Areas must be permanently protected. Leasing shouldn't even be considered in the absence of a dire national energy need and a sound energy policy.

NAME

ADDRESS

CITIZEN'S LETTER OF COMMENT

Mr. Bruce Babbitt
United States Secretary of Interior
c/o NPR-A Planning Team

2043

Dear Mr. Babbitt,

As a friend of American wilderness, I am deeply disturbed by your hasty and inadequate process for deciding the fate of the National Petroleum Reserve—Alaska.

Your Draft Environmental Impact Statement is based on insufficient wildlife studies and does not address the cumulative impacts of all past, present, and proposed oil development on fragile Arctic ecosystems. Moreover, none of your five planning alternatives offers permanent protection for world class wildlife habitats like Colville River and Teshekpuk Lake. Nor do they take account of alternative sources of energy -- energy efficiency, for example -- that are far more plentiful and less environmentally destructive than Arctic oil.

The National Petroleum Reserve is the last place we should be drilling, not the first. I strongly urge you to forestall any oil leasing until you've carried out more adequate studies and developed a true conservation alternative. Please keep the Arctic wild and free!

X_____
Signature

ANAKTUVUK PASS PUBLIC HEARING TESTIMONY — EXCERPTS

Mr. Mike Morry (AP04) (Pages 14-15)

First of all I'm aware that Nuiqsut is greatly affected by these development proposals, but as he just showed caribou that migrate through Anaktuvuk Pass also travel up north to these areas and these herds are what our lifestyle here in Anaktuvuk is based on. And for thousands of years the animals that migrate north have followed their routes every year. These areas are summer home to the caribou, among other wildlife. The caribou that traveled north are the main source of subsistence for our people.

I read into the plan, and recommendations that are still to be decided in regard to the oil and gas leasing possibilities, and I'm aware that this is given consideration, these studies on the caribou and other wildlife. As we all know the caribou follow their yearly pattern of travel through undisturbed land. It's always been that way for them. A clean safe environment. Let me stress two words again, "undisturbed land".

Although we all know that production in Prudhoe Bay opened the door for us to see how wildlife is affected by development, there is no way to see into the future and see how the wildlife will react today, especially since this will affect the caribou tremendously. More developed land on the North Slope means less land for the caribou to herd on. No matter how many precautions are taken, they will be affected. No matter how many studies are done, they will be affected. In turn, how they react could determine how much meat we have in our freezers for the summer and winter. Although this is not what really is going to happen to the caribou, there's no way to determine the real outcome.

What I'd like to know is where the plan for development is really headed, then we can see which areas are planned for development and which herds are going to be affected by this. I'd like to reiterate that development up north will affect Anaktuvuk Pass and recommend all involved in planning this proposal are aware that we, the Nunamuit, are concerned for our future and how this will affect the caribou.

Ms. Lela Ahgook (AP07) (Pages 18-20):

My name is Delia (ph) Ahgook, I'm a resident here and lived here all my life and you can see I have gray hair. That every day of my life when I'm home at Anaktuvuk I got to have one meal a day with caribou. I cannot miss having caribou meat the whole day because it's the way I grow up. And I know it will affect all of us here in the village and the other villages, like Nuiqsut, Atqasuk, Barrow, Wainwright. It is our traditional food and, like I say, I have not gone a day without having a bite to eat from caribou.

And when that happens, what's going to happen to the older people like us? I can eat steak but only one time. I cannot eat it maybe two times a day, it makes me sick, even the hamburger. Sometime I try pork chop, doesn't have very much grease on it, but it doesn't taste like caribou either. So our traditional living here is that us older people have to have caribou meat.

And we support the villages up north, like Nuiqsut I know they will also have that problem like we have had in the years since the pipeline had come. And if those other villages stop having caribou too, when our caribou doesn't come around those villages up north they gather up money somewhere to bring us caribou. They go out hunting and take just caribou to bring up here because that's the only food we eat up here. We do eat fish, too, but we only have little graylings in our river. And they're usually easy to catch around last part of July and August in our little river. Our kids can just throw rocks and catch them, take them home. And if we want little bigger fish, like graylings -- I mean Arctic chars and them big lakers, it's about two hours drive up the west -- is that west or east?

UNIDENTIFIED VOICE: West.

MS. AHGOOK: West. We have to drive that long to catch the fish if we want different bigger fish. We have to drill a hole about six, seven feet to put our hooks in that lake when it's winter. That's when we want a change to mix caribou with.

And it's really going to affect our life, so does the other villages, if that thing is going to open. And our caribou always go down to that Teshekpuk Lake or for the -- they always come through in springtime to go down north to that Teshekpuk Lake. And then after they have their calves in the falltime they -- if somebody don't scare them off on their way coming this way, they usually come back in the fall right through our village and that's how we have our food gathered up for winter.

We dry the meat, we put away all the caribou pieces, we don't throw the caribou. So my concern is if that drilling ever happens it's going to affect all of us. And for years we have heard that they will help all they can with stopping the caribou from traveling but I don't think that has stopped, I mean, you know, we go hungry when there's no caribou. So that's my concern and I'd like to also support the other villages that's going to be affected. We only eat our subsistence lifestyle.

Thank you.

ANCHORAGE PUBLIC HEARING — VERBATIM EXCERPTS AND RESPONSES TO COMMENTS

Pam Miller (AN14) (Pages 53-58)

Hello, my name is Pam Miller. I'm speaking on behalf of myself today and I apologize for my cold. First I'd like to say that there's no need to develop the petroleum reserve at this time. And I would like to point out that the law that does apply to this area of the National Petroleum Reserve's Production Act does specifically emphasize that there shall be maximum protection for the Teshekpuk Lake special area and other special areas that the Secretary may designate.

The fact that there's no preferred alternative or even a proposed action at this time makes the process a bit of a charade. Because throughout the EIS it talks about leasing and that this will be adequate for leasing program, but then it acts as though it's not proposing a leasing program. It doesn't give any of the specifics about how the leasing program would be done and the public won't have the opportunity to comment once the proposed action is prepared. So I am formally requesting that that comment period be done after the proposed action is decided.

A new conservation alternative is needed because none of the ones in the EIS provide adequate protection to fish and wildlife, rivers and wilderness. Permanent protection is needed for the Teshekpuk Lake and Colville River special areas before any new leasing occurs in the NPR-A, otherwise those areas will remain vulnerable.

Since the last time leasing was proposed back by James Watt in the 1980s and carried out biological research has further documented the unique importance to the Teshekpuk Lake special area to molting brandt, and points out the uniqueness of this area. And the studies done there show that this is a very different situation from Prudhoe Bay and that the monitoring studies from Prudhoe Bay are not applicable to this bird population. As well, studies of caribou point out that we have even more reason for concern about the effects of exploration and development on calving areas especially as it occurs over time.

Despite some technological advances in oil field development, there's no evidence that the fundamental risks have diminished or that there could be adequate mitigation through stipulations or conditions in the event of leasing or development. Therefore, the environmental costs of this leasing oil development and so on, clearly outweigh the potential energy benefits to the nation.

Comment AN14-001 (Page 55 Lines 8-25 and Page 56 Lines 1-8)

I will address, in the rest of my testimony, the issue of that the development impacts projected in the EIS are far too rosy. There's over-reliance on the un-tested Alpine oil development project as a so-called model. Well, this model hasn't been permitted yet by the Corps of Engineers, it's not built, it's not tested over time. There's no empirical evidence supporting that the assumption that the so-called Alpine oil field model as currently proposed by ARCO would bear any resemblance to what ultimately will be built in that area in the Colville Delta, including connecting satellite fields. Although, the EIS relies on the Alpine model, it does not provide adequate information on the significant environmental concerns and risks posed by that project which are currently under review. And I'll add that that's not being done in an environmental impact statement. These include risks of the oil spills, unavoidable loss of high value wetlands, location of drilling facilities within the flood plain, disturbance to migratory birds from the airport and so on. The map in the EIS calling itself the layout of Alpine field doesn't even include all the facilities that the Alpine field would need. It doesn't have the pipelines, the gravel pit. It doesn't have a natural gas pipeline or power lines to Nuiqsut. Furthermore, there's other connected activities, the Fjord prospect to the north, they're drilling offshore wells offshore there this winter and other proposed projects within the 80,000 acre Colville River unit which ARCO has recently proposed.

Response AN14-001

The commenter's concerns about using the Alpine development project as a general model for future oil field development are addressed in Responses 1652-031, 1660-081, and 1661-007.

In this way, just this year, direct impact of the oil fields as projected is far below what would ultimately occur. There's no mention of indirect or secondary effects and the best studies of oil field growth over time have showed that the cumulative effects are significantly greater and often are delayed beyond the direct effects.

Comment AN14-002 (Page 56 Lines 14-16)

The EIS assumes that there will be no major road networks built even though there's no stipulations which strictly prohibit such road construction.

Response AN14-002

The Preferred Alternative prohibits gravel roads connecting to a road system outside the planning area (see Preferred Alternative Stipulation 48).

Comment AN14-003 (Page 56 Lines 17-20)

There are some limited restrictions for the goose molting area buffer and a crucial caribou movement corridor, but those can be modified or waived. And the stipulations are all designed with the fact that an economical oil field shall still be allowed. So that's a fundamental flaw with the stipulations.

Response AN14-003

Alternatives A through E Stipulations could be waived or modified if the modification or waiver is environmentally preferable or if the lessee can demonstrate that, among other criteria, "the goals of the stipulation can be accomplished through alternative means" (see Sec. II.C.7.a). Stipulations for the Preferred Alternative may only be waived or modified if "the alternative means proposed by the lessee meets the objective(s) of the stipulation." Some stipulations in the Preferred Alternative may not be waived or modified under any circumstance (see Sec. II.C.7.b).

At some point, if you had a number of small oil fields as it's discussed without connecting roads, it would be uneconomical and it would be cheaper to build roads than have many air strips.

Comment AN14-004 (Page 56 Line 25 and Page 57 Lines 1 & 2)

As well, the impacts of having all these air strips around and their potential to affect the water fowl habitat is not adequately addressed,

Response AN14-004

Text at Sections IV.B.8.a(2) and IV.C.8.b(1)(b) revised with additional discussion of aircraft effects on birds. The comment presents no verification for the statement that it would be cheaper to build interconnecting roads than an airstrip for each drilling unit. While there is no stipulation that prevents interconnecting roads, No.30 encourages the integration of airstrips with roads to decrease the extent of each. The most disturbing aircraft, helicopters and large transport, are not to be used routinely, and air traffic is limited in the Goose Molting Habitat when geese are present. Regarding discussion of potential effect of aircraft on waterfowl

habitat, 30 percent of the discussion under Alternative A treats this topic; this is considered adequate.

***Comment AN14-005** (Page 57 Lines 2-4)*

nor are the water needs for all of the ice roads that would be constructed instead of gravel roads.

Response AN14-005
Water withdrawals are regulated by the revised stipulations (Sec. II.C.7) and are discussed in revised Section IV.C.3.b.

Pipelines would be allowed in all alternatives across the Teshekpuk Lake planning area. Even though there would be impacts from pipelines, there would be leaks. There would be the need to monitor pipelines to see if they were leaking. There would be the need to go in with helicopters and cleanup the leaks. And this is especially important because pipelines are the most common source of spills on the North Slope,

***Comment AN14-006** (Page 57 Lines 11-14)*

more than 60 percent of the spills are crude oil or hydrocarbons of other sorts and the most common is diesel fuel, which the EIS does not even address. It only talks about crude oil.

Response AN14-006
Please see Response 1951-012.

And because no matter what kind of a pipeline it is, it has the potential to leak, those impacts should be considered.

***Comment AN14-007** (Page 57 Lines 16-19)*

Finally, I'll say the direct and cumulative effects from offshore development is not evaluated at all in the EIS even though that is a reasonably foreseeable event to occur in the future.

Response AN14-007
The cumulative effects analysis has been expanded to discuss offshore development.

***Comment AN14-008** (Page 57 Lines 20-24)*
And I will, because I know I'm running out of time, I will just mention that in general the stipulations are fundamentally flawed. There is only seven out of the total that are lease stipulations, not just -- the rest would only apply later on in the permitting phase when things are much more political.

Response AN14-008
In the Preferred Alternative, all stipulations are to be lease-sale stipulations.

I'm very concerned about the cumulative effects across the entire North Slope of oil development. We haven't done a good job so far with getting balance for permanent protection for critical wildlife areas and our spectacular wilderness and I urge the BLM to construct new conservation alternatives in their final EIS.

Thank you.

Marilyn Houser (AN31) (Pages 106-108

Hi. My name is Marilyn's Houser and I'm representing myself this evening. I am not a professional natural resource manager or environmentalist and therefore, do not have the time to read this 750 page EIS, but do not feel it is a prerequisite to being able to comment.

I've lived in Alaska 20 years and have had the good fortune to spend a total of 11 weeks in NPR-A in the last seven summers. Having traveled in the NPR-A, as well as in some of Alaska's national parks and refuges, I've concluded there is no logical reason why NPR-A was not afforded protection in 1980 with ANILCA. I do not understand the current fast-track, and that's BLM's words, not mine, for oil development in NPR-A. There is not a national security issue or looming energy crises. I'm especially bothered that this country continues to do virtually nothing for conservation of fossil fuels and development of alternative energy sources. I'm very concerned about the decision to address NPR-A in a piecemeal fashion looking only at the specific planning area as though development there will impact that area only. I'm also concerned that the wildlife data used in the EIS is old, as much as 10 years in some instances.

I must comment on my experiences in NPR-A. It's beauty is breathtaking, truly awe-inspiring. It is big country. You can climb a bluff or rise and see for miles and miles. It is as though you have a window on a prehistoric time. During my visits to NPR-A, I've had the good fortune to observe herds of thousands of caribou, grizzly bears, wolves, wolverine, sheep and even an occasional moose. We've also had repeated sightings of the rare yellow-billed loon as well as red-throated Pacific and Arctic loons, Arctic peregrine falcons, rough-legged hawks, sandhill cranes, swans, old squaw and many others. The tundra, river, river beds, river corridors and alpine areas team with life. Wild flowers, such as Arctic poppies, Siberian asters, arnica, saucceria and numerous moses and likens. We found bone fragments that were very old, perhaps hundreds of years. We've encountered evidence of old hunting blinds fashioned with slabs of rock and very old careens or trail markers. We've even seen what we believe were old, possibly ancient tool fragments. I don't understand a move now that would threaten all of this.

I support Alternative A at this time, but with the following additions. Protection of the Colville River as a wild and scenic river. Creation of a new special area along the Ikpikpuk River. Adding the Pik dunes to the Teshekpuk Lake special area and creation of a bird conservation area along the Colville River and its tributaries.

Thank you.

ATQASUK PUBLIC HEARING — VERBATIM EXCERPTS AND RESPONSES TO COMMENTS

Mayor Ben Nageak (AT01) (Pages 25 and 26)

Comment AT01-001 *(Page 25 Lines 19-25 and Page 26 Lines 1-6 and 12-19)*

I'm just reiterating some of the things that we met about the cabins and some of the concerns I raised to you about some of the hunting areas that we -- I used my brother and I as an example. Although they're not on the map, they're not pinpointed on the map, you can't tell when you go to our area where we've hunted or set up camps or tents, you can't even tell because we pick up after ourselves when we leave. You can't even tell we've been there, but a lot of people who know when they travel says, oh, this is Nageak's or this is Kanayurak's camping area, you know, people know where those camping areas are, although they aren't indicated or you can't even tell. So that was one of the concerns I raised to Mr. Ritchie.

And also I stated that someday I'll get older and I won't be able to tolerate the cold as much as I can right now.

But some day, you know, I might have the need for the cabin and, you know, if there's a restriction I won't be able to so, you know, those are some of the concerns that Arnold raised and we hope that dialogue stuff continues on the use of cabins and cabins already in place and cabins that may come, you know, because of -- you never know what's going to happen. Because we use those hunting areas and we're going to continue to use those hunting areas.

Response AT01-001

As indicated in Section II.G of the IAP/EIS, BLM will continue to have a "dialogue", or work with the NSB to determine the extent and potential resolution to the camps/cabins issue within BLM's existing policies and procedures. See Response 0106-002.

Bartz Englishoe (AT02) (Pages14-16)

Well, I need to apologize, I've been working on this speech and it's 40 minutes. No, it's just a few comments.

Comment AT02-001 *(Pages 14 Lines 20-25 and Page 15 Lines 1-13)*

I work with the Atqasuk Corporation and I've reviewed the EIS statement and quite a few of the comments the corporation submitted weren't covered or covered very lightly. One of the important issues is local hire. And we were hoping the Department of Interior would be a little creative, try to take steps to ensure that local residents, or specifically Native people had a priority in receiving work. There's really nothing in the EIS about that. We were hoping that BLM would send a message to oil companies and subcontractors that said, "look, if you want to our oil in NPR-A you're going to have to bend over backwards to hire Native people." And just not a handshake, but maybe legislation that says a certain percent of local residents will be hired, there'll be training. None of that was in there.

I would also like to see maybe some of the royalties that BLM are going to get specifically tailored toward that. They can take five percent of the royalties and put it back into forcing job training, of local hire, social-economic studies, various things like this.

Response AT02-001

The BLM can encourage the use of local hire. However, as a Federal agency and equal opportunity employer, we cannot place requirements on permittees regarding the level of local hire. In addition, the use of 5 percent of Federal royalties for local hire or economic studies is not allowed under existing law.

Comment AT02-002 *(Page 15 Lines 14-17)*

We didn't think there was enough on co-management of fish and wildlife. If you want to protect them, the Borough expertise is excellent and would definitely like to see co-management agreements.

Response AT02-002

The BLM cannot abrogate its management authority on Federal lands or programs. We will and have worked cooperatively with the North Slope Borough and local communities under existing authorities to manage fish and wildlife resources. This IAP/EIS is an example of that cooperation

Comment AT02-003 *(Page 15 Lines 18-25 and Page 16 Lines 1-8)*

Also would like to see strong language where individuals don't have to negotiate with oil companies to hook into an oil field that's next to their village is there is one. We'd like to see federal legislation that says, absolutely if there's a gas field found close to this village, they're going to get hooked into that. And hopefully free. This free gas to a village would make tremendous economic -- provide tremendous economic benefit to the village. At $4.00 a gallon for diesel up here it's expensive. We think the federal government can be very creative.

And let it be known if oil companies want to come into NPR-A they're going to have to do this and that, there hasn't been any of that in the EIS statement. Maybe we have to go to Washington, D.C., and work with our congressman and state legislators but we'd like to see the local office of BLM here take the lead in that. Put it in the EIS so it can be debated.

Response AT02-003

The BLM does not have the authority to require permittees to link villages into an oil field, or to provide them with free natural gas. This is outside the scope of the IAP/EIS. Copies of written comments are available for public review at the BLM Alaska State Office in Anchorage and the BLM Northern Field Office in Fairbanks.

Comment AT02-004 *(Page 16 Lines 9-13)*

And my final comments is, I'd like to find a place to read all the other comments that people have submitted and will submit and I'd like to see those on the Internet. There's a lot of, probably, ideas that will spark interest or can be further discussed and people can get behind.

Response AT02-004

Transcripts from the public hearings were placed on the Internet. Given the volume of written comments submitted on the draft IAP/EIS, we were unable to place all of those comments on the Internet. Copies of written comments are available for public review at the BLM Alaska State Office in Anchorage and the BLM Northern Field Office in Fairbanks.

Comment AT02-005 (Page 16, Lines 14-25)

And one more issue. If oil is found, let's say, three miles from Atqasuk lands and there's oil rigs there, pipelines, there doesn't seem to be anything that says how the corporation is going to benefit as a land owner. They're taking oil away from underneath the corporation's lands, although the corporation doesn't own subsurface, there should be some effort to guarantee that the village lands, which are going to be disturbed by oil development get a major boost in either subsurface royalties, close proximity royalties, rentals, various things like this. If oil companies aren't going to bend over backwards to put any money in the village unless they have to, BLM can ensure that, and they can be real creative.

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Response AT02-005

Lands located within 3 mi of Atqasuk are outside of the Northeast Planning Area, and therefore, outside the scope of this IAP/EIS. In the example presented, oil companies would negotiate directly with the surface owners (e.g. Atqasuk Inupiat Corporation) to obtain access, and with the subsurface owners (e.g. ASRC) to remove oil from private lands. The BLM has no authority for regulating oil and gas activities on conveyed private lands where the subsurface is also privately owned.

Luke Kagak (AT03) (Pages 21-22)

Comment AT03-001 (Page 21, Lines 8-19)

MR. AHVAKANA: Mr. Kagak just stated as an example, ever since utilizing Prudhoe Bay, as an example. When that area was opened for oil and gas, it was mentioned to the villages that the job opportunity is going to be there available for each village and presently there's hardly anybody working there. There's hardly any Natives that are working in the village. If NPR-A, Alaska, is going to be opened for oil and gas and EIS don't specifically indicate in writing exactly what Mr. Englishoe had mentioned earlier about job opportunities, it needs to be clearly mentioned and supported by some other documents available to make sure that job opportunities are available in that area.

Response AT03-001

Please refer to Response AT02-001.

Comment AT03-002 (Page 21 Lines 20-25, and Page 22 Lines 1-3)

And another thing is that the -- presently there's been a lot of sick caribou being harvested. They don't know where this sickness comes and why the meat is infected from whatever. If the industry would be allowed to have a possible, maybe some type of a scientific research on that type of a species that are affected by oil and gas. Something needs to happen because these are the livelihood of these people that Mr. Kagak had stated. These things should be included in EIS, in accordance with what I'm hearing.

Response AT03-002

Under the Preferred Alternative, the BLM will create an Interagency Research and Monitoring Team (Section II-F-7) to design and coordinate research and monitoring efforts. See also Preferred Alternative Stipulations 29 and 59 which require the lessee to study the effects of oil and gas activities on caribou and subsistence.

BARROW PUBLIC HEARING — VERBATIM EXCERPTS AND RESPONSES TO COMMENTS

Jana Harcharek (BA03) (Pages 20-25)

Good evening, Jana Harcharek, I'm with the Planning Department's Commission on Inupiat History Language and Culture for the North Slope Borough.

Cultural resources and sites and areas of historical, cultural, spiritual and traditional use and value to the Inupiat are integral facets of Inupiat society, both in the past and in contemporary times. Oral traditions describing activity in the planning area tell of our origin in a story told by Elijah Kakinya, who was a very well respected elder from Anaktuvuk Pass. "At Umiat, it is said, and at Ivisaaq, the Utqiaqsaat lands...When the big flood come, everything was covered by the ocean, and they were able to hunt whales; at Umiat there were no other animals..."

To the Inupiat, this is verification that Inupiat people have accessed the Umiat vicinity for subsistence and spiritual purposes throughout millennia. We continue to do so today.

I contend that the Mesa Site is the site that Kakinya refers to in his account of how people "in an umiaq used to see a tussock with grass on it rising to the surface. When they saw that tussock rise, they tried to catch it...Then raven speared it...and the ocean began to recede." There is no evidence of human habitation in the area surrounding the Mesa because people were living in boats and kayaks until the ocean receded.

Comment BR03-01 *(Page 21 Lines 14-23)*

There are hundreds of sites in the planning area that contain both archaeological and historic material and resources. We know, all too well, that these resources are nonrenewable. Paleontological remains which could be interpreted to have a direct physical relationship with archaeological resources to which the Inupiat have ties, and also found in the planning area. Contrary to the Draft EIS, there are sites within the planning area considered sacred by the Inupiat. In addition, numerous graves, both marked and unmarked, dot the planning area.

Response BR03-001

Section III.C.2, Cultural Resources, has been revised to acknowledge the existence of sacred and other traditional sites within the NPR-A, even though few sites have been physically located and many remain known only through oral tradition. In order for BLM to fulfill the purposes of Executive Order 13007, such sacred sites must be located and recorded.

The Borough recognizes and respects the nonrenewable nature of the wealth of resources. We must adhere to the regulations promulgated by federal laws designed to protect these resources.

Comment BR03-002 *(Page 22 Lines 3-25 and Page 23 Line 1-19)*

The North Slope Borough's Commission on Inupiat History, Language and Culture, or IHLC, is designated by the State Historic Preservation Office as the Certified Local Government per the National Historic Preservation Act and is empowered to assume any of the duties that are given to the State Historic Preservation officer per 36 CFR 800. BLM, as the federal agency responsible for an undertaking in the planning area must work with IHLC to ensure lessee compliance with the National Historic Preservation Act, or NHPA; the Archaeological Resources Protection Act, commonly referred to as ARPA; the Native American Graves Protection and Repatriation Act or NAGPRA; and Executive Orders 13007 regarding Native American Sacred Sites.

As the Certified Local Government, IHLC will implement comprehensive procedures to ensure compliance with Section 106 review process provisions contained in the NHPA regulations, when it appears that that undertaking in the planning area might affect cultural sites of interest to the Borough. It is extremely important to the Borough that consideration of cultural sites occur in the very early stages of project planning so that concerns regarding potential effects receive thorough consideration.

Conspicuously absent in the DEIS Alternatives section describing interrelationship is any mention of ARPA and NAGPRA. Of specific concern to the Borough is the lack of any reference to the consultations mandated in two acts. ARPA regulations require consultations with tribes, if any ground disturbing activity is to occur. Per 43 CFR 7, Section 7.7, IHLC wishes to enter into an agreement with the BLM for determining locations for which the Borough wishes to receive notice. IHLC is also entitled to review any proposals for excavations and wishes to work with BLM on instituting a systematic process to initiate these reviews. IHLC will work with BLM to determine what circumstances should be the subject of special notification after a permit has been issued.

Per NAGPRA regulations, IHLC wishes to receive notice of inadvertent discoveries or planned activities that may result in the excavation or discovery of human remains and cultural items. IHLC will work with BLM to develop a written plan of action including documentations of the kinds of objects to be considered as cultural items as defined in Section 10.2(b) of the regulations.

Response BR03-002

The Archaeological Resources Protection Act and the Native American Graves Protection and Repatriation Act have been added to Section II.F.1. This section lists some of the major laws and executive orders that apply in one way or another to the planning and permitting process in the NPR-A. The BLM will consult closely with the North Slope Borough's Commission on Inupiat History, Language and Culture in all compliance matters related to cultural resources.

Comment BR03-003 *(Page 23 Lines 20-25 and Page 24 Lines 1-10)*

Throughout the proceedings, beginning with the scoping meetings last spring, BLM has led people to believe that they will recognize, acknowledge and incorporate traditional knowledge into the process of drafting the EIS. The North Slope Borough is alarmed with the treatment of traditional knowledge in the DEIS. I quote from page III-C-7, "The number of TLUI locales in the planning area greatly exceeds the number of recorded archaeological sites", and I add emphasis here, "suggesting that if cultural memory is a reliable manifestation of reality, there must be hundreds of as-yet-undiscovered cultural sites within the planning area." This insulting reference is a flagrant indication that BLM does not regard Inupiat traditional knowledge with any degree of respect. This issue is even more critical given the fact that oral traditions are so closely intertwined with the NHPA, ARPA, NAGPRA and Executive Order 13007.

Response BR03-003

Section III.C.2 has been modified to address this comment.

Comment BR03-004 *(Page 24 Lines 11-25 and Page 25 Lines 1-2)*

The DEIS reference to sacred sites omits key language regarding ceremonial use. In its entirety, the definition of "sacred site" in Executive Order 13007 "means any specific, discrete, narrowly delineated location on federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriate authoritative representative of an Indian religion, as sacred by virtue of its established

religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site."

There is an assumption made in the DEIS that there are no such sites. In fact, based on oral traditions and the documentation of such sites by Western anthropologists, there are. The Borough needs ample time to thoroughly review existing information to ascertain which sites are sacred, as defined in Executive Order 13007.

Reponse BR03-004

We understand that sacred sites may exist in the NPR-A. However, none have yet been identified to BLM by those authorized by Executive Order (E.O.) 13007. We encourage those who are authorized to identify sacred sites, to do so. These sites need to be identified to BLM so that we can fulfill the purposes of the EO.

Please see Response 1669-036.

Potential impacts to cultural resources as described in Section IV., Effects, Alternatives A through E of the DEIS should contain more detailed protective measures. Descriptions of impact vary from, these impacts can be satisfactorily addressed through the current assessment and decision making process, to the protection of cultural recourse in the planning area would follow the established and proved procedures developed by BLM during the NPR-A exploration of the late 1970s and 1980s.

The Borough asserts that IHLC, as the Certified Local Government representing the North Slope, will be the agency with whom BLM must work to establish acceptable procedures for protecting cultural resources. The resources include traditional land use sites; sacred sites; burial grounds; archaeological sites; paleontological remains; traditional cultural properties, or TCPs as defined in the 1992 amendments of the NHPA; any site of cultural significance to the North Slope Borough and its residents.

I want to thank you in advance for your consideration and cooperation and for the opportunity to provide these initial comments. Quyanaqpak.

Morgan Solomon (BA05) (Pages 31-35)

Thank you very much, Hearing Officer Nelson Ahvakana. My name is Morgan Solomon, I was born in Wainwright, raised in Fairbanks. And I came here to this country back in 1967 from Anchorage, after I got out of service. I have seen establishment of the North Slope and the Petroleum Reserve ever since I was a little boy. And also the Prudhoe Bay area. There has been a lot of compromise in conjunction with oilfield development in our country up here for many years. There have been many promises. Promises to our people in term of equal employment opportunities, equal training. All these things has happened for a long time. And yet since the oil development started in Prudhoe Bay we were picked to train in some areas that they thought would be viable for our livelihood.

But those promises were broken, meaning that sometimes the Native people went up to train, trained for a little while but were not given the opportunity to train in such a way that they could have a full-time employment. Or if they have some alcohol problems that they would go ahead and let them go. What I'm getting at here is three agencies. Three agencies meaning BLM, North Slope Borough, State of Alaska, I listen to them working towards a partnership should the 4.6 million acres be developed or a part of it should be developed. But I'm also looking at the petroleum area here as one of the most unique parts of our country here in the North Slope. The reason I say that is because I have been around that country for many years since I came up here, going back and forth every other week working for Atlantic Richfield Company in my time.

I work week on and week off for six and a half years in Prudhoe Bay. That land in summertime is a land for our animals. Both the birds, caribous and it's also a land of opportunity for subsistence use of our people here in the North Slope and it was the only area where Nuiqsut people can hunt because they couldn't get on the east bank to hunt caribou openly and to hunt other animals openly because Prudhoe Bay was continuously developing towards the western part of that area. And I'm going to ask that if the EIS is going to be proposed by all the parties that this time our Native people be listened to, that you help our people on the areas that they know most. On the areas before any development started.

Jana Harcharek had made some very viable statements, the Mayor of the North Slope Borough had made some very, very real good sound statements. The State also had some good statements but, you know, on the long run, as I know Prudhoe Bay, as when it was first developed, the promises are never kept. Under those circumstances you would have 4.6 million acres that must be developed under a control system. In other words, no more false promises made to the Native people by the federal government, the state government. There should be an agency here, we have an agency called North Slope Borough. The North Slope Borough was developed so that we can take into consideration in providing ourselves some money to develop our villages, educate our people and be just like any cities within the state of Alaska that are entitled to such.

You know, I read here 50/50, the state 50 percent, the federal 50 percent and whatever is left over is going to go into our -- part of our country up here, but that's not good enough. You know, before NPR-A this was our land, this country was our land, we had roamed this country all our lives. And then as soon as it was turned over to the federal government, the federal government turned around and start putting in regulatory system, so they could keep us away from our areas where we traditionally hunt and, again, you know, for the past year these colors over here scares me. The colors, the five systems -- the five areas that they wish to develop. The National Petroleum Reserve Development Program for Teshekpuk area.

Teshekpuk area is one of the most beautiful lakes in the whole state of Alaska because it provides all of our needs as far as our subsistence lifestyle is concerned. Our sea mammals, our sea animals, our birds and so forth are embedded in that region. And so as a Native person and as growing up, not just here, but all over Alaska, I'm hoping that if there is to be development that everyone works together, that the Native village people from Nuiqsut, Atqasuk, Barrow, Wainwright, wherever, have the first opportunity to let you know that we care for our people for generations to come.

I'm going to speak in Inupiaq very briefly as to what I have stated because I believe most of my people understand where I'm coming from. I helped develop Prudhoe Bay. As a matter of fact, I had the first opportunity to be a member of those few people that opened up the first well. I know how it is and once after that we were forgotten. We were forgotten for the last 20 years because you will never see somebody retiring from that area with the exception of two people out of 80. And that's the kind of promises that the oil companies make to our Native people when they first started to develop Prudhoe Bay area. And I hate to see this again if it should be developed, that promises are broken overnight. They forget who lives up in this part of the country.

And I'd like to thank for the opportunity to make this statement. Although I don't have a written statement in front of me, but what I'm trying to address here, I believe, is something that's coming from my heart because I was one of the individual Natives that was promised a job of opportunity only to lose it six and a half years later because someone had more education than I did.

Thank you.

Bill Tegoseak (BA06) (Pages 35-38)

Excuse me for a moment while I prepare. Good evening. My name is Bill Tegoseak. I wish to address the issue of environmental desecration on tribal lands in the name of oilfield exploration and development. I work for the federally recognized Sovereign Tribe of the Native Village of Barrow as an Environmental Technician and as such I wish to comment, from a historical perspective, on environmental concerns that have evolved within the ranks of our Inupiat Tribe since President Warren G. Harding declared tribal lands, Naval Petroleum Reserve Number 4 in 1923.

Prior to getting into any further discussions regarding potential oilfield exploration or planned exploration on tribal lands, it is only fitting that protocol be recognized and established during these proceedings.

The Native Village of Barrow recognizes our guests from the United States Department of the Interior on a government to government basis, in particular, the federal agents from the Bureau of Land Management and would also like to acknowledge the agents from the Minerals Management Service who may not be here today. As federal agents these people's primary trust responsibility to us is to protect and preserve tribal lands.

The rich history of the Inupiat Nation spans a minimum of 4,000 years. It is unequivocally clear that my people have used and occupied the lands under consideration for oilfield exploration and development since time immemorial. Let no one doubt that we've never signed any treaties relinquishing our inherent right to Tribal Land ownership. We've never sold our tribal lands and we've never gone to war and lost ownership of our lands. We have never given up our possessory or aboriginal rights, indeed these are our promised lands.

With this understanding it is my responsibility, as Environmental Technician for the Native Village of Barrow then, to ensure that our Inupiat Tribe has substantial and meaningful involvement in environmental policy decisions impacting our village, our tribal membership and our tribal resources.

At this point it would be foolish, at best, to ignore past oilfield exploration activities which have so negatively impacted tribal lands. On August 6, 1947 the Arctic Research Laboratory was established under the auspices of the Office of Naval Research in the Native Village of Barrow, specifically to search for fossil fuels in the name of national security. In a period of just over 30 years the U.S. Navy, the Air Force, the Corps of Engineers, the U.S. Coast and Geodetic Survey, the Atomic Energy Commission, other federal agencies, prestigious universities and private enterprise, as well as the international community, began a systematic desecration of tribal lands. In that regard I invite you in the audience this evening, if you are not knowledgeable of environmental damage done in the past to tribal lands in the name of development, to pick up both documents of informational material I am providing.

One packet, prepared by the military, outlines the tremendous amount of contamination, toxic and hazardous waste, in many cases, extremely hazardous materials left by the military in the wake of oilfield exploration.

The second document outlines the inhumane treatment of my people by the Air Force in the 1950s and 1960s, specifically the use of the Inupiat people as guinea pigs by injection of Iodine 131 to determine if my peoples' thyroid gland made them more acclimated to cold weather. This experiment was done since the Naval Arctic Research Laboratory gave the Air Force accommodations and facilities to conduct inhumane experiments in complete violation of the Nuremberg Code.

The United States government throughout the last 50 years has shown very little concern for the well being of either of our environment, or more importantly, for our people. Throughout the last six months the Environmental Section of the Native Village of Barrow has gained the limelight of environmental issues. We've been asked to speak in places such as Aniak, in Kansas City, in Anchorage, in Seattle and we will also give our environmental concerns that are tied into the military in Spokane in April of this year.

At this point we do not express opinion in oilfield development in NPR-A. Our message is, if exploration is to occur, it must be done in an environmentally sound manner, protecting the environment, protecting the natural resources, protecting the well being of our tribe for the benefit of your government and mine. It is our sincere hope that as a recognized federal tribe that if development is to occur on our tribal lands on which we have lived at least a minimum of 4,000 years, that development be done with respect to the environment, with responsibleness and if damage is to occur, to make sure that the damage is cleaned up in the proper sense and those people that do damage the land are held accountable.

Our involvement with the military throughout the last 50 years or so has indicated to us that the United States government, through the Department of Defense, has been unwilling and, up to this date, certainly has been unwilling to accept responsibility for the tremendous amount of damage that is shown in these documents. We ask, again, that if any exploration, if any development is to occur, that the activities be done in an environmentally sound manner.

Thank you.

Mayor Jim Vorderstrasse (BA10) (Pages 57-63)

Ms. Wisely, thank you for coming. Officer Ahvakana, it's a pleasure. Commissioner Rutherford and her staff, thanks for coming.

I know the Ikpikpuk River area is an area dear to me, it goes back a quarter of a century, actually, when I was a guest of the Everson family up there and I truly enjoyed -- still do enjoy that area. It's where my late father-in-law, Charlie Everson, was truly at home, along with his wife, Mary. And it's -- I had my honeymoon up there, as a matter of fact, almost 23 years ago and, you know, you do the things honeymooners do, but then in the meantime we found an old paperback called East of Eden and I can remember we read that to each other, my wife and I did, out loud. And I was just sitting here tonight reflecting up on that East of Eden. And that's what this area reminds me of. It's East of Eden, this has been the heart of the subsistence way of life for the Inupiat people for many, many years.

And I think of former Governor Hickel's statement not too long back, that if Prudhoe Bay would have been in the middle of Kansas, 200 farmers, their lawyers and accountants would have controlled all the oil wells from Prudhoe Bay. And I thought to myself, well, to me, he's saying, 200 traditional subsistence families from the North Slope should have controlled the wealth of Prudhoe Bay. Unfortunately they didn't know all the tricks that go along with Western society, so they were kind of left out of that process and their wealth had been shared very generously with all the rest of the people of the state of Alaska and also the nation.

And like anytime when you're very generous with something, a lot of times it's not appreciated. And unfortunately that's what I've seen through the development of Prudhoe Bay, the oil wealth that's been spread out to the state. I see a lot of people, rather than being happy that they got that, they want more, and the place they're going to get it is off the dog-gone North Slope. And that why we're in the situation we're in right now where we have urban legislatures (sic) trying to take the little wealth that we have left here on the North Slope, they begrudge it of us, and they want it all. And I think to myself, gee, the people of the Slope really got hammered here. And I think back on it, the history of Alaska, the Russians at one time controlled less than 100 acres of land on the mainland of Alaska and yet they sold that to the

United States government. And that's why BLM is here today, they own Alaska, but I really don't think they had much claim on the North Slope.

But regardless of that, we have to work within our rules. And I know there's little hope of ever changing that, even though, as you heard tonight, there are some people that I hope there is some changes made there. But this brings us to NPR-A and this might be the last chance for the people of the North Slope to enjoy some of the oil wealth that is rightfully ours. What is the price that we are willing to pay for the industrialization of our garden, basically? And the North Slope has been a garden that fed the families of the people here for thousands of years.

I don't know, I can see right now that we're not going to stop the powers that be developing our country here. Regardless of what we say or do, I think most of us have come to the realization that we can only put our trust in the government, that they're going to protect this country that is so dear to all of us here. And that they're going to give us what is rightfully our, our fair share. And I understand that there's five different alternates up here, but as Mayor Nagcak said tonight, we're working to create our version. And it's hard to talk, and I think Mr. Brower alluded to that, that without one specific preferred plan it's hard to target on one thing.

But the people of the North Slope have, historically, supported oil and gas leasing on land. Not because they were crazy about it, not because they thought they were going to get anything out of it but they thought, gee, if we let them develop the land then, at least, they're not going to be out here in ocean threatening our bowhead whales. And I think that's the feelings of most of the people here, gee, we're just thankful that, you know, they're going to develop the land instead of going out into the ocean. And I know you still want to do that, too. And those demonstrations are a lot more fun then these conferences, I will say that. A lot shorter, too.

But I know, fortunately, the oil companies had developed new technology and I appreciate that and, you know, they can say they're doing it for the environment, I personally think they're doing it for economic reasons because the smaller that footprint is, the less taxes they're going to have to pay the North Slope Borough. But for whatever their reasons, the footprint is smaller and we're thankful for that. However, there's still a certain amount of pollution, noise pollution, venting of gas. I know flying over Prudhoe Bay I thought to myself, gee, this reminds of the Wizard of Oz when he was in there running all these levers and the flames shooting up. And I think, gee, you know, we look to Prudhoe Bay as the Wizard of Oz, we thought they were going to solve a lot of our problems, but unfortunately that just hasn't happened.

But we still have a chance with NPR-A. I think the people of the North Slope are putting their trust in BLM.

Comment BA10-001 (Page 60 Lines 21-25 and Page 61 Lines 1-16)

I look at this document, at first I thought it was the New York Telephone Directory, but, you know, it's very thorough in a lot of respects, and then in others I -- you know, I think, well, wait a minute, what has the California thistle that grows in the backwaters of the San Francisco Bay got to do with -- and then I think, gee, did some people just stick a bunch of stuff in a book? Does anybody use this document? And then I got to looking at the mammals, for instances, and I might be wrong here, I was going to ask Mr. Okomailak up there, talks about terrestrial mammals, it talks about the caribou, moose, brown bear, Dall sheep, musk-ox, Arctic fox, red fox, porcupine, ground squirrel, wolverine, weasel, wolf, marmot, but I don't see the good old avinguk (ph) mentioned anywhere. Now maybe they're not around that area, I don't know.....

MR. A. BROWER, JR: (Indiscernible - away from microphone)

MAYOR VORDERSTRASSE: Okay. Well, the sisruk (ph) I knew are different than the avinguk (ph), but I know that the avinguk (ph), at least in the Barrow region here, is the basis of all the food chain.

Response BR10-001

Lemming populations are not likely to be affected by oil and gas exploration and development, or by other planning area activities (see Section IV.C.9.a.(2)(b)8), Effects on Other Small Mammals.)

And to miss that -- maybe Arnold was right, that they got it confused with something else, but I thought, whoa, how good is this document? I know it was done under a rush circumstances. I know, looking through the economic impact I saw that they identified that less than one percent of the population of Barrow works at Prudhoe Bay, I think they got that right. But, you know, it is a thorough document though, but I think it all boils down to protecting the access to the subsistence rights, subsistence hunting grounds. And also the quality of life out there in the good old Ikpikpuk River area and that type of area.

Comment BA10-002 (Page 62 Lines 2-8)

I see that protective measures, exploratory drilling is not allowed within 1,200 feet of any cabin or known long-term campsite. To me I don't have any scientific data, but I know if we would have had a drilling rig within 1,200 feet of our honeymoon it sure wouldn't have been as great of an experience as it was. And I hope that my children can someday experience the solitude, the feeling of being out there on your own.

Response *BR10-002*

Please see Response 1669-005.

It goes on. There's a lot of terms that I think need further definition. Commissioner Rutherford alluded to potential impact funds. That always scares me when I hear potential, you know, that sounds good but, you know, that could evaporate tomorrow. And I hope that that -- I mean, the municipalities of the North Slope already had to go to court once to guarantee that those impact funds remain there. And I would hope that that is protected.

Comment BA10-003 (Page 62 Lines 17-24)

I would hope that -- it goes on to say in your protective measures "subsistence users will be allowed reasonable access to oilfields for their activities." Well, you know, that's kind of -- you know, that could be -- I don't see people hunting over in Prudhoe Bay. I know my brother-in-law and I once pulled his boat up and, gosh, we had to jump through all kinds of hoops just to put it in the Arctic Ocean and we felt like we were strangers in our country. So I hope that these can be defined a little bit more.

Response BR10-003

The comment is partly addressed by Preferred Alternative Stipulations 60, 61, and 63. The objective of this series of stipulations in relation to subsistence access is to identify an open process through which local communities, and the lessee will work cooperatively to define the "reasonable restrictions" that may be appropriate for a specific lease area. The BLM has developed its stipulations based on the consultation process which occurred in conjunction with the ARCO Alpine project and MMS Lease Sale 170.

Another concern was the access to oilfields. What is an oilfield? I mean, the oil is under maybe our cabin, does that mean we're going to have to ask permission to go to our cabin? I mean, is the oil field just the actual production facility area? It's just a lot of nebulous terms that I think need to be nailed down.

Comment BA10-004 (Page 63 Lines 6-25)

And then the final thing that really concerns me that we've had no real test on is "upon abandonment or expiration of a lease, oil field facilities must be removed and the site rehabilitated. BLM may determine that some facilities be retained, if, in the best interest of the public." Now, you know, Prudhoe Bay is going to be quite a chore for some people to go in there and make that pristine wilderness again. Now we haven't had that test yet. And I wonder, is there any place that actually has been restored? We have Umiat, I don't think we want to hold that up as an example. I mean, that's been cleaned and cleaned and then we find out people buried stuff, contractors buried stuff trying to beat the system and now it's coming up and haunting the river. I just have a real concern what kind of retainage fees or what kind of things BLM is doing to guarantee -- I know contractors in Prudhoe Bay that went bankrupt 10 years age and who knows they might have a mess there, I know. I know there's going to be people that were here when the boom was on that aren't here when it's time to clean up. And I want to make sure that the people of the North Slope aren't saddled with that.

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Response BR10-004

For a company to obtain a lease, there are bonding requirements so that funds are available for the cleanup of any activity, should the company fail to do so upon abandoning that activity. Please also see Response 0907-001.

FAIRBANKS PUBLIC HEARING — VERBATIM EXCERPTS AND RESPONSE TO COMMENTS

Dave Klein (FA04) (Pages 21-22)

Comment FA04-001*(Page 21 Lines 24 & 25 and Page 22 Lines 1-19)*

I think it's important that we have better knowledge than currently exists. Even though I think BLM and Fish and Game -- Alaska Department of Fish and Game and other agencies have done some excellent work in providing information for the EIS, there's still much more that needs to be known before we can make a good judgement as to how to proceed and what trade-offs might be involved. I think a good model for this is the model that Congress developed for the coastal plain of the Arctic National Wildlife Refuge providing a period of five years for both environmental studies as well as assessment of the energy resources, the geophysical studies as well that were carried out so that the American public and Congress would be in a position to know what trade-offs might be made if oil was to be explored for and developed. And I think that kind of information is needed by the American public. And I don't think there's an adequate basis at this time to make that kind of a judgment. And that kind of information, if it's available and exploration is to proceed, would allow for a much more sensitive exploration with a much greater, much greater, reduction in impact on the fish and wildlife resources of the region.

Response FA04-001

As indicated by the draft IAP/EIS, a considerable amount of data related to the NPR-A already exists. Section 105, the Naval Petroleum Reserves Production Act of 1976 (PL 94-258), required studies to be undertaken to "determine the best overall procedures to be used in the development, production, transportation, and distribution of petroleum resources in the reserve." Studies were conducted and formed the basis for the EIS conducted in 1983, this EIS, and ongoing studies that have been conducted since 1983. There is adequate data to determine the tradeoffs. The Preferred Alternative also provides for an ongoing research and monitoring program to add to the knowledge base of NPR-A, and the impacts of oil- and gas-related activities.

So I thank you very much for the chance to say a few words.

Jim Plaquet (FA09) (Pages 35-37)

Could I get all my brothers and sisters of organized labor to stand, pipe fitters, laborers, operators? My name is Jim Plaquet. I'm a Business Agent for the Operating Engineers Local 302. I reside at 1444 Second Avenue. Like I said, my name is Jim Plaquet, and I'm representing all these Fairbanks men and women who are standing up.

The petroleum industry is an invaluable component of Alaska's and Fairbanks' economy. With Prudhoe Bay oil reserves in decline, it is essential that all new areas be opened for oil exploration and development.

The oil industry in Prudhoe Bay has a proven record of environmental excellence that can't be compared to anywhere in the world. I encourage BLM to move forward with the lease sale in the National Petroleum Reserve in 1998.

We, the Fairbanks workers, want to go on record in support of Alternative E, all lands available for oil and gas leasing. We oppose the creation of new special areas or expanding existing special areas. The oil and gas industry has made tremendous technological strides. Advancements such as directional and extended-reach drilling and seismic exploration make environmentally safe development possible in virtually any location.

If oil exploration and development in Alaska is stifled, we ultimately stifle the Alaska economy. Countless people, both directly and indirectly working for the oil industry will suffer financial demise. We Fairbanks workers have house payments and other bills to pay and the loss of these jobs would have a devastating negative impact to us and our community. Oil industry jobs have provided the needed employment for Fairbanks workers to support their families. The tax base provided by Fairbanks workers has allowed area residents through tax dollars to sustain local businesses, schools, hospitals, and other essential community services.

Once again, I encourage BLM to move forward with the lease sale in the National Petroleum Reserve in 1998 with area wide leases. Opening the NPR is good for the country and for all of us that live in Alaska.

Thank you.

Fred Heflinger (FA19) (Pages 54-56)

Yes, Thank you. I'm Fred Heflinger, and I'm from Fairbanks. And I'm here, I'm in support of Alternative E. There's a lot of people that don't want roads or anything built up there. I hope they build a road right up through the center of it so I can drive up there and look at it.

As far as harming the wildlife and stuff, just like Fairbanks here, if we all left tomorrow, the wildlife would walk around here like we'd never been here. And I don't know what's wrong with these people that think we're hurting too much.

There's a lot of union members here, and I hope you -- I'm not a union member, but I hope you all speak because most of you want to hide behind your leadership and walk away; and you ought to talk. Because everybody better say that they want a livelihood. And I want that oil. I want the revenues for the State of Alaska so I don't have to pay so darn many taxes, and I can get the benefits that they give me because I do get some benefits. And I'm all for development. And Alternative E is the only way to go.

Comment FA19-001 *(Page 55 Lines 1-14)*

As a matter of fact, they're talking about these helicopters, they don't want the oil companies flying them certain months of the year. Well, let's not let BLM fly them either. Let's not let any of these wilderness lovers like -- that want to go up there and study caribou fly around with helicopters either. Let's have the same rules for all. Let's not have any of these jerks like Marlin Perkins up there with a helicopter running around making a movie scaring the hell out of the animals, too.

So I think that maybe we ought to -- if we're going to look at this, if the oil companies have to play by certain rules, let's let all the federal agencies and everybody play by the same ones, and keep those helicopters off of there if they want it that way.

Response FA19-001

Preferred Alternatives A through E, Stipulation 54 in the draft is one of several that resulted from a workshop to address possible mitigation measures to the impacts of petroleum development on caribou and waterfowl. The panel on waterfowl, concerned about disturbance of molting geese, was trying to determine the level of helicopter activity that could be allowed without adverse impacts. Past studies clearly showed that helicopters disrupt goose-feeding

behavior, and suggest that at some level that effect could result in greater mortality during migration. Current data are inadequate to determine how different disturbance levels affect mortality. The panel worked under the knowledge that some agency flights were necessary during the molt season for management for petroleum development. However, after an oil industry representative stated that they would not need helicopters during the molt season, the panel subsequently set the stipulation at zero flights for oil/gas lessees instead of attempting to use inadequate data to determine a protective threshold.

In the Preferred Alternative, the restriction on helicopter use has been changed. Preferred Alternative Stipulation 53 suspends helicopter flights for all BLM-permitted operations, instead of just for oil and gas lessees. This still would allow agency flights that are necessary to meet mandates for resource management (i.e., scientific surveys by FWS, BLM, and ADF&G). However, those flights would first be evaluated to assess whether they could be conducted at a different time of year. If not, could the flights be routed within the Goose Molting LUEA in such a way as to have the least impact on geese, while still accomplishing the mission.

And I don't want to deny anybody who's got any rights there already, any rights. They should be able to do whatever they been doing in the past. But, you know, this stuff about pipelines polluting, that's a bunch of garbage. That's -- I haven't seen much pollution from that pipeline at all. And let's see -- yeah, I don't want the area closed. And these people want to run up there with dog sleds and stuff and -- or run around the world with dog sleds. Dog -- I got to listen to dogs bark all the time. I don't like listening to sled dogs. And I don't like them dropping their feces in my yard and stuff, so there's another way to look at these dogs, too. And so any development up there is going to be transient within 100 years it'll probably be gone. And the animals up there won't even notice that we've been there. So let's develop it.

Dave Duhart (FA20) (Pages 56-58)

Dave Duhart, private citizen. And I just got done working on Alpine and Badami and Warthog, and I thought I'd share some information on what I learned up there.

I'm an environmentalist, but I get my money from the oil companies. Some people might consider that hypocritical. And 10 years ago, I would've too, because ARCO and BP had no environmental program at all. They had reserve pits, and dumped the mud right over the side out on the Cook Inlet, but a lot has changed. I mean not just that we recycle glass and paper and batteries and light bulbs and everything else, but solid waste disposal is taking care of the reserve pit. So that was a great, great environmental malfunction that's been -- we re-inject our oil solids which helps bring the oil to the surface, and you use less surface of the pad along with directional drilling, like someone else has mentioned. But I don't think that they've mentioned side-track drilling where you could put a small pad and drill out four miles, 360 degrees. It's going to make for less pads and less environmental impact up there.

First before I could even go to Alpine, I had to go to school here and get these environmental cards. Here's a little eight hour TAPS class, where they tell you how to act. And here's a 40-hour hazardous waste card that shows that if you wreck the environment or do anything out of line, aloha, you're fired. Here's an eight-hour BP card. It's more of the same, really. Here's a 40-hour hazardous card, which allows me to respond in case there's a spill. And blah, blah, blah. You can't even get a job now unless you're environmentally aware. In other words, if you walk on the tundra, you get a warning, even though the caribou do it all the time. If you walk on the tundra one time, you get a warning. You do it again, you're fired. If you feed a fox or leave your garbage out, you're fired. If you drive a truck there, they give you a little liner that you put in the back of your truck. It's a 3 x 3 visqueen liner. And if you park your truck and you don't put your liner under the engine to catch the dripping oil, you're fired. That's it. They're just not going to put up with it anymore. When you fill your tank up, if you don't have your liner under the nozzle, and oil drips onto the ground and you don't report it, you're fired. I wonder how many containments are under the cars out here in the parking lot today. I'd assume that more oil is going to be dripped in this parking lot than the whole Sadlerochit Field up north.

Anyway, I know you guys can't make a final decision on this. It's a public forum and it doesn't mean anything. But let's just say that 20 percent of the nation's oil is produced in Prudhoe Bay, okay? And the Sadlerochit Field and the Kuparuk Field are diminishing. Now, Badami, Alpine, the Lisburne and the Endicott, if you study the record of their environmental impact, I think you'll find it's really, really excellent. The last 10 years they've become so much more environmentally aware. And we want to get away from thinking that these oil field fat cats are just cigar smoking carpet-bagging interlopers. They're not. They're geologists and they're laborers and they're operators and they're technicians. And they care about this land because we all live in it. And we no more think of trashing it than we would of changing our oil in the driveway and letting it seep into the ground.

So I support Alternative E. I think we've proven we can get the oil out of the ground with very minimal environmental impact, and we're going to have to meet the energy in the 21st century. If we don't produce it now, when are we going to produce it?

Thanks for your time.

Jon Miller (FA24) (Pages 67-71)

My name is Jon Miller. I live here in Fairbanks, 2630 Home Run. Thank you for this opportunity to comment on this very important document tonight. The summary of the Draft EIS begin with the words, "Dear reader, welcome and thank you for your interest in the future of Arctic Alaska." These are indeed apt words because what happens to the NPR-A will indeed effect a major portion of the North Slope of Alaska.

I'd like to make three points about the Petroleum Reserve and the Draft EIS. The first is that the Petroleum Reserve is a magnificent wilderness area. And together with the Noatak and gates of the Arctic conservation areas to the south, it's the largest expanse in de facto wilderness that we have in the state and in the country.

Two companions and I spent six weeks crossing the NPR-A from Kasegaluk Lagoon in the west to Prudhoe Bay in the east. We did that by lining our boats up the Utukok and then taking advantage of that elevation by floating down the Colville. It was -- we spent 40 days without seeing another human being. We didn't even see a small plane fly overhead. It was fantastic. We spent that time in the company of wolves, grizzlies, caribou, musk-oxen, down near the Beaufort Sea. And when we reached the Colville River delta, there was no mistake that we'd come to the end of that wilderness journey. The first night that we were on the delta, we could see flares from -- 40 gas flares to the east in the Kuparuk and the Oliktok Fields. This country is not country where you can hide the artifacts of humans very well. You can see a long, long ways.

Make no mistake, the NPR-A is a national treasure and the merits of costs of opening these public lands for oil development by private corporation should be very carefully weighed by the public. The rushed schedule, scarcity of public hearings around the country and general shortage of publicity about the NPR-A all preclude the public making an informed decision, I feel.

I would urge that BLM choose Alternative A, no oil and gas lease sales at this time in order to protect public interest from overly hasty review process. And I do emphasize at this time I'm not suggesting that the entire area is suitable for wilderness designation, but I believe the process to date has been entirely inadequate for the public to make an informed decision.

Comment FA 24-001 (Pages 69 Lines 5-23)

My second point is that the Draft EIS does not adequately address the cumulative effect of the expanding oil production on wildlife recreation and traditional subsistence activities across the entire North Slope. It does little to explain, predict, or plan how the alternative management scenarios described herein will actually affect Arctic Alaska beyond the limits of the planning area.

Finally, EIS should make a concerted attempt to pla -- excuse me, a concerted attempt to place its alternative management plans in a larger temporal and geographic content. For example, development of the northeast portion of the Reserve, which we're considering today, will intensify pressure to continue expanding westward. Eventually coal and mineral extraction in the southern and western portion of the Reserve will become economically feasible. The fact that oil production today will pre-dispose further development later is not even mentioned in the Draft. This seems to me to be an example of a general failure to accurately describe and predict important cumulative impacts.

Response FA24-001

The cumulative analysis has been expanded. Please refer to Section IV.H.

Third and last, the Petroleum Reserve was set aside to provide petroleum reserves during a time of national need. Since large oil reserves are not present as originally anticipated, it cannot fulfill this purpose. It was never intended to serve the ends of corporate profit, and I would suggest that the wilderness, wildlife, recreation and subsistence values are far a greater and more lasting resource than even the large amounts of oil that originally expected to be there.

I would urge BLM to consider the long-term public good and to make a much more concerted effort to involve the public in the decision-making process prior to deciding the fate of these important public lands. And to this end, I urge you to adopt Management Option A, which leaves the greatest room for further planning. I also hope that the Final EIS will contain a much more thorough description of long-term cumulative impacts and the protective and mitigating measures that can be taken to reduce detrimental impacts on wildlife wilderness subsistence and recreation values. And if I have -- do I have.....

MS. FOX: Yes, go ahead.

Comment FA24-002 (Page 70 Lines 20-25 and Page 71 Lines 1-11)

MR. J. MILLER: Just as a postscript, the alternatives, other than Alternative A, describe three different possible levels of protection for the Colville River as a wild and scenic river. And during the three weeks or so that we floated down the river, every day we climbed one of the wonderful bluffs that were available alongside of the river and look out over some of the vastest expanses of undisturbed land I've ever seen anywhere. Magnificent country. The scale is staggering, even by Alaskan standards, day-after-day.

Well, we spent two days once, and probably 50 river miles we could see a very small white shack off in the distance that was some sort of -- I don't know, some sort of human structure. For two days we could see that. Well, when they talk about a half mile buffer, scenic buffer, along the wild and scenic river, that's rather absurd in my estimation. How about a 20 mile buffer instead if you really want to preserve the wild character of the river?

Response FA24-002

The scenic buffer is based on the position of being on the river, not climbing to a high point on the bluffs. The Colville River was found "unsuitable"and is not proposed for wild and scenic river status in the Preferred Alternative.

Thank you very much.

Roger Siglin (FA27) (Pages 80-81)

Others have covered my concerns about protecting the beauty of the land and the natural resources that it supports. Now, I'm not personally wise enough to know if in the long run, and I mean the real long run, it makes more sense to preserve the land as it is or develop its oil and gas resources. But I think I'm wise enough to know that it makes no sense to develop those resources in the short run. We are already wasting non-renewable resources at the fastest possible rate. And if future generations remember or condemn us for one thing, that will be -- that will probably be it. What is really the issue here is industry's desire to tie up as much of the public's natural resources as quickly as possible, and at the cheapest possible price. And any claims of doing this for the good of the country are just a smoke screen.

What surprises and disappoints me is the support industry gets from people who I think should know better. In the case of the politicians who need industry's dollars to support them, it's not surprising, I guess. But the vast majority of us should be concerned with leaving our children and grandchildren options for the future in a world rich in natural resources of all kinds. Let's let them decide which is more precious, wild lands or a few days more of oil and gas. I support the no action alternative.

Thank you.

NUIQSUT PUBLIC HEARING — VERBATIM EXCERPTS AND RESPONSES TO COMMENTS

From Translation of Public Hearing Testimony

Thomas Napageak (NQ02)

Thank you. My name is Thomas Napageak, a resident of Nuiqsut. I am going to talk this evening as the President of the Native Village of Nuiqsut. First of all, when BLM people came, I spoke in English as well as writing on paper.

Comment NQ02-001

I do not see in this draft the things we spoke about at the previous meeting. What the people of Nuiqsut said are not to be found in the materials here. You heard Nelson indicate that we talk about those that could have negative impact on us. To name a few of them, there is what you hunt in terms of game. In 1972, you residents of Nuiqsut made a decision to return to your ancestral grounds, the home of your parents. It was not the North Slope Borough who decided for you. You decided on your own to come here to live. They are saying that it was the North Slope Borough who moved you residents here. That, they're saying is how Nuiqsut got started. Arctic Slope Regional Corporation subsidized you, giving you the grub to make the trip here back in 1972 so that you could reclaim the land where your ancestors lived.

Response NQ02-001
The text in Sections III.C.3.b(5) and III.C.4.a has been changed to reflect this comment.

Comment NQ02-002

Those that they would like to take away from us begin with the whales although they spoke well about whaling itself. That is, the beluga. The report says that although we try to hunt the beluga whales, we do not catch them. I don't recall a time when I went hunting for beluga whales. I've never seen a beluga here. But they've written in the report that we are a people who normally hunt beluga whales. That is an error on their part.

Response NQ02-002
Section III.C.b(3)(b), Beluga Whales, has been changed to indicate that beluga whales are not significant to the subsistence cycle.

Comment NQ02-003

On the seals, you young people know that when the river floods, it starts flowing out into the ocean in front of our village affecting the seals that include the bearded seals in the spring month of June. In their report, they have written about Henry Nashaknik making a report. You have heard Nelson telling us to talk about those that will be impacting our lives. Henry Nashaknik's report is talking about a place that is seventy-five to one hundred miles away, east of here, at a place called McClure Islands and saying that it is the only place where seals are hunted. At a place called Sikfaqtitaq when people like Nukapigak were still living they used to go there to hunt for seals. Whereas we, those of us who live here, our concerns haven't been recorded from what I see right here.

Response NQ02-003
The text in Section III.C.3b(3)(c), Seals, has been changed. Statements by Henry Nashanknik and Bruce Nukapigak about sealing practices in the past have been deleted, and updated with statements about present-day sealing practices, made by Thomas Napageak and Ruth Nukapigak, from the NPR-A Nuiqsut Public Hearing, January 14, 1998.

Comment NQ02-004

Right now we are located on 26A unit and that was where we were put when the Department of Fish & Game distributed the lands. The report says that when duck hunting season arrives, we go hunting for ducks. Canadian geese and the black brant are listed as endangered species. Because we have always hunted the black brant, we have been put in the report as such. And that's a bogus statement. Obie and Nageak did that statement. They are right here. That is what the employees of the North Slope Borough are treating us like. Our people are being fined for hunting the black brant and they're trying to put our people in jail. You know that. We live in 26 Unit A. There is quite a few, including people like Kowalski, who have reported about our hunting. People like Obie and Nageak (Ben Nageak when he used to be working for the Wildlife Management). I am not finished talking about everything they said we did with hunting ducks and geese. They went on to say that we hunt oldsquaw and the pintail ducks. Who here can say that they hunt pintail ducks? Who here has hunted the pintail ducks? That is what has been put in the draft EIS here. Pintail ducks, whoever at those? Have you? I know you resided here.

Response NQ02-004
The text in Section III.C.3.b(3)(h), Subsistence, has been rewritten to delete "oldsquaw" and "pintail" from the list of waterfowl species harvested by subsistence hunters. The text includes more recent statements from the NPR-A Nuiqsut Public Hearing, January 14, 1998. These statements by Thomas Napageak, Nelson Ahvakana, and Ruth Nukapigak reflect current harvest practices of waterfowl. Tables III.C.3-1 and III.C.3-9 have been changed to reflect these comments, as well.

Nelson Ahvakana: Don't point to me. I'm just here.

Thomas Napageak: I am grateful for Sarah and Samuel Kunaknana who have had the courage to speak when they have in the past. What they put in the report is not as long as it should be.

Comment NQ02-005

They stated in the report that Kuukpik was the only place where fishing was done. Nelson, you know, in the summer when it is time to fish for large, round-nosed whitefish the place called Tillabruaq gets filled with them as well as the entrance to Itqiciq. Nibliq river gets filled with nets all the way to the point where it begins. We do not go to Kuukpicuk in the summer months. Then we enter Fish creek and that is where hunting sites and cabins have been built. That is where they build racks for drying fish and for drying caribou meat. That is what is not found in their report. I see that they have reported about Uvlutuuq. Do you know where Uvlutuuq is located?

Response NQ02-005
The text in Section III.C.3.b(3)(g), Fish, has been changed to reflect the comments made by Thomas Napageak, Sarah Kunaknana, and Ruth Nukapigak to include the correct locations and seasons for fishing.

Nelson Ahvakana: Yes, I know where it is.

Thomas Napageak: They have said in the report that Uvlutuuq is the place where we do our hunting when boating season arrives.

Sarah Kunaknana: We have not gone to Uvlutuuq to do our boating.

Thomas Napageak: It is written in this document here. Examples such as these are what hurt me deep inside emotionally. Where are our speeches that we made? Fuel and gasolene used to run our snowmachines and outboard motors run high as part of our expenses.

Comment NQ02-006

The report they compiled as the Nuiqsut household expenditures on subsistence activities. These result include only those households that participated in census survey. Probably no one spends more than $10,000.00. A snowmachine alone costs about that much. An evinrude $12,000.00. Those are what we use to hunt. They think that we don't spend a lot of money to subsist here. We longer use oars to do our hunting when we are in our boats. We use evinrude outboard motors. We don't hunt pintail ducks. I'm sorry-I am not a person who hunts pintail ducks.

Response NQ02-006

The text just after Section III.C.3.b(3)(i) has been revised to include Thomas Napageak's statement about subsistence expenses being higher for the average subsistence hunter in Nuiqsut than Figure III.C.3-13 indicates.

Nelson Ahvakana: I don't think that I have ever shot a pintail duck as far as I have been alive.

Thomas Napageak: I spoke earlier about us living in an area known as 26 A Unit. You all know that that area is being controlled by the Department of Fish & Wildlife. Arnold, you are aware of that. The statement reads Brower, Obie.

Comment NQ02-007

It states further that we start hunting for moose in the month of July through October. In 26A Unit, we were told by Fish & Game to begin hunting after August 1st for moose. We may break the rules from time to time, but I can say that we do not go that far as the report is saying right here. I want you all to know that. It says that when Kuukpik water starts going down and depleting as they hunt for moose, they would stop hunting because of the conditions making them stop such as an inability to carry moose on our backs and travel by snowmachine is difficult.

Response NQ02-007

The text in Section III.C.3.b(3)(i), Moose, has been changed to reflect the proper season and practice for hunting moose by Nuiqsut subsistence hunters.

Iqalliqpik goes all the way to Judy Creek, you know that. (?). And they're saying that they are hunting grounds. What they said about fishing for whitefish at Kuukpik is true. While that is true, it is most true that another place where they fish for whitefish is Nuiqsabruaq. You also know that from here all the way to the end of (?) those fishing for whitefish would fish from the frozen waters. I don't see it recorded in here. I am talking about those that could hurt us.

Nelson Ahvakana: That's good. That's what they want to hear. Keep talking about them.

Thomas Napageak: These five that they are presenting, I've only talked about just a part of the whole picture, without them fixing their report, you people read them by finding out where Nuiqsut is located and correct them. I cannot even begin to choose one from the five they are presenting to us that pertains to our lives. Thank you.

Ruth Nukapigak (NQ04)

I was listening to them say that we hunt ducks. I have been hunting game for many many years. It is because I love to hunt that I am still doing it to this day. I love to go fishing. I love to follow my son Jonah every year just when the ice begins moving down there and it takes us one hour travel time to get there. That is where we go to hunt for seals. The distance is quite far traveling one hour from here to there but we make it. The residents of Nuiqsut use Fish Creek in their subsistence activities. In addition Nibliq area is used extensively where they do their fishing and in the sunmer months when the fish enter it, fish nets can be seen all the way down.

When Alpine was said to be beginning despite the arguments we had with the oil companies against it, they are not honest with us. I am going to call them dishonest people. Wildlife Service employees, in particular, are the ones who have treated us in the same way too. They do this by drafting materials without our knowledge. Wildlife Service employees have allies with Helmet's Camp. When you go into their homes you will see on the second floor of that house every kind of stuffed ducks. There are all kinds of ducks that you will see there on display on the second floor of that house. A person can see them there. I saw them when someone took me to the second floor of that house. He probably is the one who creates trouble for us residents of Nuiqsut because they have people like them to do their hunting for them when hunting season comes. And when they reported in the documents that it is a fact that we hunt pintail ducks, I thought how untrue those reports were. We do not even touch the pintail ducks which we see in our village. They can be seen just outside our homes in small puddles of water. This spring things have been different in our village. We have not have as many pintail ducks as ptarmigans.

Comment NQ04-001

But there have have been small birds seen here that normally aren't seen every year. They must have come from somewhere. I also got angry when they said earlier of how we residents of Nuiqsut hunt for eggs. We do not hunt for duck eggs

Response NQ04-001

The text in Section III.C.3.b(3)(h), Birds, has deleted any mention that Nuiqsut subsistence harvesters hunt for duck or goose eggs. Tables III.C.3-1 and III.C.3-9 have been changed to reflect these comments, as well.

Also at the mouth of Nibliobaurat black brant used to nest there by the hundreds. There were so many that they looked like bowls from a distance filled with eggs. We could have hunted them if we chose to. When they flew away, it looked like there was a big, black cloud. But we do not hunt them. Although when the white-fronted goose (?) come, they do hunt them. When the thin ice near the mouth of the river breaks up, that is when they start duck hunting. We, the residents of Nuiqsut go there to hunt for ducks when they arrive. I do not know how the ducks that nest along the sea coast are doing because it has been so long since we lived there before we moved back to Nuiqsut. There is a very big nesting area along the sea coast though but since we moved here some time ago, we do not know whether it is still that way. In the direction facing the inland where Isuk is also an area where geese nest. They look like moulting ducks where they are not able to fly. That area along the sea coast has a lot of game. There are also a lot of caribou that can be seen in the summer months. Our subsistence activities could very well be diminished if the oil companies move into our land and build whatever equipment that they want to do the work that they are pursuing. The very area where we do our subsisting is about to have a pipeline go through it also. I wonder where the caribou will travel through this summer when they begin migrating this way when the pipeline is built through their usual route low to the ground. Maybe they will change their route and begin traveling a long ways away to cross. A caribou in the summer months when it gets hot here does not fear anyone when he has to run to where it is the coolest in order to run from the very warm temperatures. They're unafraid. If the pipeline is going to be built low to the ground, it is very possible that moose will

destroy it just to cross over it when Alpine is opened up. I am happy to be receiving money in exchange for having the oil companies build a pipeline but at the same time it is no lie that money goes as fast as it comes. I wonder how we are going to subsist if the game we hunt, including the ducks and the geese disappear here. Another thing that we have been given as the point that we can hunt for moose is the area at the mouth of Anaqtuuq. We have been told that we cannot hunt for moose past it. We cannot hunt past it, we've been told. When the residents of Nuiqsut begin hunting for moose, they are not able to get a moose right away and very often get a moose right at the end of the moose hunting season. The village of Nuiqsut is not like Barrow. When you live on the coast, like Barrow, there is a lot of game to catch. You don't have to travel very far either to catch it. That includes the geese, and seals, etc. But when you live inland, like Nuiqsut, you have to travel quite a distance to the coast to hunt. The oil companies this winter have been very determined to get what they are after. It must be the VECO company. They've said that they will be constructing a pipeline if they discover oil there. What will they do about the traditional hunting grounds? I do not know what they have plans to do with the hunting grounds. The hunting grounds extend all the way to Fish Creek.

Another area that is no longer accessible is Uuliktuq. Last fall because ARCO made Uuliktuq inaccessible, it took over one week to haul two whales back at Cross Island. That has made things very difficult for us. As a result they were brought back through a big aircraft. Uuliktuq had always been a place where our people left their boats after whaling because of the ice that usually formed making it impossible to return by boat. That is why they left their boats at Uuliktuq. Last fall they did bring their boats back. Where are they going to leave their boats from now on if they are not permitted to use Uuliktuq which had always been used? Right now the way it is, they cannot leave their boats at Uuliktuq.

I watch the Wildlife Management people who work with game where my cabin is located walking on the ground. The area where I've seen them walking is where the pipeline is going to be built. Right there. Every summer they go there to check up on the game at calving time. Another place they go to is by Nuiqsabrutat You can see them setting up their tents and they get around by helicopter. How did they draft their materials without consulting the residents of Nuiqsut? I don't believe what they're saying. The Fish & Wildlife Management have to be drafting their materials without doing any consulting from the people who live in the areas that will be impacted. This fall the residents who set out their nets have caught fish. I, myself, took my net out in December right before Christmas Day. I was catching white fish in my net. Last spring we were fortunate to have caribou in our region as well as this fall. And they've been seeing caribou in the area north of us and I think it has been mainly due to less activity by these people here. I doubt that they would have been seen if these people had come around doing their activity. I think that once they start up again, our caribou are going to go elsewhere because they will see them. The residents of Nuiqsut hunt seasonally when the time comes that certain game are perfect to catch and not all the time. When fishing season is right, they set their nets out to subsist for their yearly supply. When the ducks and the geese arrive, they start hunting for them. When whaling season arrives, they set out north to go whaling. There is no doubt that any outside activity is going to affect us in a very bad way impacting our subsistence way of life. If these people are given the okay to go ahead with their drilling, it is going to turn out looking like the Prudhoe Bay oilfields.

Comment NQ04-002

Another thing that bothered me earlier was a comment made that we were told to move here to Nuiqsut by the North Slope Borough. When Johnny, Suluk, Samuel Kunaknana, and I worked to incorporate Nuiqsut as a second class city by gathering other residents who wanted to move back to Nuiqsut, we did not work with the North Slope Borough. They were not aware of what we were doing. It was after we formed a group of residents that opted to move back to Nuiqsut that Arctic Slope Regional Corporation found out about it. That was how we started out re-establishing Nuiqsut. When we began our move back to Nuiqsut was when ASRC funded our trip by giving us five hundred dollars with the gas and grub that we would be needing on the trip. ASRC was the only one that was involved in our move back. After being here several years, we began to hear from ASRC that if oil were to be discovered, we, the residents of Nuiqsut would gain financially from it because of the oil rigs/equipment being constructed on our land whereas ASRC would earn monies from the subsurface rights. Those were their words when they first began talks about drilling on our land. When we first started out living in Nuiqsut, we lived very poorly and did not have a lot of things. Our children were able to attend school. We lived in two tents back then the whole winter. In the spring time, when you looked inside the tent you could see the soot accumulation inside of them. That is how we wintered the first year.

Response

The text in Sections III.C.3.b(5) and III.C.4.a has been changed to reflect this comment.

From the Hearing Transcripts

BERNICE KAIGELAK (NQ05) (Pages 25-27)

My name is Bernice Kaigelak and I'm 32 years old and I have lived here since I was eight years old. I don't -- I'm not affiliated with Kuukpik Corporation or with our Native Village of Nuiqsut and I strongly feel that we don't have a neutral party in our community to better represent us. I oppose the Alternatives of B, C, D and E because it does not protect our land and our area.

In the past, when Bruce Babbitt was here, I let it be known that I oppose the opening of NPR-A and I still feel strongly about that because we haven't feel the effects of the Alpine development. It's too soon. It's too early. The people of this community need to feel what it's like to be that close to a developing oil field. And then I think they could better decide what's best for them instead of doing it now when they don't even know how much that field over there is going to affect this community.

As a child I grew up in a sod house with my grandparents in Atqasuk and now today I live here with running water, electricity and I drive a truck just like you all do. It's been a very fast change from living subsistencely and not knowing much about the Western lifestyle and to be pushed so fast to where you can't live without any knowledge of the Western living. Now, everyone is here is accustomed to living that way and I'm sure the people of our community would like the benefits that come with taxes and the stuff that comes with oil. Sure, ARCO and Sohio come here every year, present us with free gifts, but I feel very strongly that it should be slowed down, this process, this opening of NPR-A. Maybe somewhere down the line when people understand how it affects us, that field over there, then maybe I would feel comfortable deciding somewhere down the line it maybe okay, we can work together.

I know I'm a shareholder of Kuukpik Corporation and ASRC and I know they are in pursuit of making all this happen in any way to bring revenues for them. I understand that. That's just part of the Western society, that's come here and taking over, but I feel I need to stand up, because my father didn't stand up for himself. He already lost his right to his land out in Prudhoe Bay. My grandparents had a sod house and a cellar there. Now we can't even go over there. We have no right to it even though my ancestors were there before the oil fields were. And for some of the sites on NPR-A that maybe you don't know about any unmarked graves or whatever and Native allotments that are pending and not going nowhere. I think we've lost enough already. It's time to stand up and say, no, slow down.

Comment NQ05-001 (Page 27 Lines 2-10)

With these Alternatives of B, C, D and E, the reason why am I opposing them is what do I know about designating the Colville River, a wild and scenic river. Are they going to stipulate fishing regulations on it? How do I know it's not on the dotted line of your EIS draft there? What about this proposing of a bird conservation area? Is that going to limit me from hunting the geese and ducks that I do so freely? And

the 50 percent of the area where it's covered, it's not even close to where we should be. I mean, where are we protected?

Response NQ05-001

The designation of the Colville as a wild and scenic river would not require the stipulation of fishing regulations on it. Please refer to the Preferred Alternative and discussion on the unsuitability of the Colville as a wild and scenic river. The Bird Conservation Area is proposed primarily for managing riparian habitat for passerines and raptors. There would be no limits on hunting activities within the Bird Conservation Area.

So I don't want to take too much time because it's late and I know people have to go to work, but I would like to let it be known that this needs to change somehow, the Alternatives B, C and D. I don't know how you can make Nuiqsut be a part of this to change that, but right now, I'd go with A because I don't see any protection for our community.

Thank you.

Mayor Leonard Lampe (NQ06) (Pages 27-29)

Good evening. My name is Leonard Lampe, for the record.

I'd like to thank Thomas, Joe, Ruth, Johnny and Bernice for testifying tonight and thank everybody for staying so late. Also, thank you for the opportunity to comment tonight. I'm going to bring up a few reminders from April and August meetings that Nuiqsut had commented on some of the NPR-A. This will be a -- also a written comment will be sent in the mail and available for residents who want a copy of this written comment.

Back in April and August, the community felt very strongly against the time limit of this proposal of the development of NPR-A. We all stated that 18 months is too short for the period of an impact statement to be made. We're seeing proofs of that today of our statements not being in this Draft EIS.

Another issue was the boundaries of the NPR-A for planning of development. It was an issue of being too large of an area to develop all at once. The east side covers a lot of subsistence as well as traditional areas of the Nuiqsut people. The community heavily depends on resources and access of resources of the animals of NPR-A area.

Comment NQ06-001 *(Page 28 Lines 16-22)*

We give the same information, testimony, as been given to this body and other panels of the government agencies for 20 some years and these -- and our vital comments and concerns are not documented in your Draft EIS. For many years, we've said these comments and concerns, yet, they're not put in black and white in your 720 page document.

Response NQ06-001

Sections III.C.3, III.C.4, IV.B.13, and IV.B.14 include dozens of statements by local residents about their concerns, issues, and subsistence uses and resources. In these sections the author tried to find three or four representative Native comments that related to particular themes and issues raised in the process of scoping and analysis. This attempt is to simply include what, for many years, the Inupiaq people have been saying. The Comments that appear in text are taken from various public hearings conducted on the North Slope since the early 1970s. Traditional knowledge was taken into account in the conclusions for the subsistence and sociocultural analyses, although the linkage may sometimes be difficult to see. Subsistence mitigation and the Subsistence Advisory Panel are products of local comment and concern.

Comment NQ06-002 *(Page 28 Lines 23-25 and Page 29 Lines 1-11)*

This community wants assurance that our children will be able to live the traditional lifestyle that we and our forefathers have lived for generations of harvesting the resources. That's our main goal that we want assurance that nothing will be changed of what we are doing. We've already seen patterns of change today. We're concerned of the new patterns of the traditional harvested animals because of development in the area because of seismic and exploration. If development occurs, we would like no boundaries identified to prohibit subsistence activities by the government agencies. Oil companies -- the big two oil companies tell us all the time they will not prohibit us from using firearms, but these restrictions and laws are beyond their control, they're on the government agencies that restrict firearms.

Response NQ06-002

Preferred Alternative Stipulation 60 prohibits lessees from unreasonably restricting oil field development areas from subsistence users. The stipulation sets up a process whereby the lessee will develop procedures for entrance to oil field areas in consultation with local communities, the NSB, and the Subsistence Advisory Panel. These procedures must be approved by the BLM Authorized Officer. The intent of Stipulation 60 is to replicate to the greatest extent possible the cooperative process which accompanied development of similar procedures for the Alpine project.

Impact funds have always been an issue with the City of Nuiqsut, knowing that this community is and will be affected the most of these proposed developments, we share all NPR-A impact funds with other villages that do not even see the effects of impacts on hunters and fishermen who harvest the animals of NPR-A and see the changes of lifestyle to the people. Yet, they are compensated the same as this most affected village.

Comment NQ09-06 (Page 29 Lines 19-22)

The community wants assurance that traditional use areas by the Nuiqsut people will be excluded from development and not taken away indefinitely by the government.

Response NQ06-003

Based on comments received from North Slope residents and governments, the Preferred Alternative would sharply restrict oil and gas surface occupancy in several identified traditional subsistence-use areas.

We also support a subsistence oversight panel that will oversight the subsistence activities and make sure that the subsistence is not being affected heavily by exploration and development. Our people were always and always will be here before and after the development. We will live the affects so we want to please have you keep in mind that decisions you make will affect our destination.

Thank you.

SAN FRANCISCO, CALIFORNIA, PUBLIC HEARING TESTIMONY — VERBATIM EXCERPTS AND RESPONSES TO COMMENTS

Bill Gomez (SF06) (Pages 30-33)

Thank you. I'm Bill Gomez, a retired businessman and an individual who has visited the Brooks Range and the Arctic Coastal Plain seven times.

I'd like to make my comments in two areas. First two broad comments, and, second, two specific comments on the Draft EIS.

In the broad comment area there are more than a thousand linear miles of Arctic Coastal Plain, and there is no permanent wilderness protection for any of that particular area.

Specifically there are three very unique wilderness areas that are environmentally very sensitive. The 1002, an area of the Arctic National Wildlife Refuge, the Teshekpuk Lake area, and the Colville River area, the last two being part of this EIS.

Oil development in my opinion is wilderness lost forever, and it seems to me that if we are going to make decisions along those lines, that it is appropriate to include permanent protection for wilderness areas if we are going to sacrifice part of this very unique area.

I would urge the Department of the Interior to develop a comprehensive Arctic Coastal Plain proposal that would include proposals for NPR-A as part of this comprehensive plan for both development and wilderness protection.

My second general comment relates to oil. As a businessman, I think leasing makes no sense to the federal government at this time. It's been mentioned there are low prices today. There are estimated to be 40 to 50 years left of production in current Arctic Slope areas that are already developed.

I see no U.S., United States, value added in terms of refining or consumption of the oil ultimately. Most likely those activities would take place outside the United States with exported oil.

My view is the oil should be left in the ground for three reasons. Strategically it would be the appropriate thing to do. The United States would be better off financially. The United States would be better off developing later rather than sooner, and environmentally we would be better off.

As we have seen, future oil development systems are likely to be less invasive than they are today.

With respect to the DEIS, specifically if leasing is to be considered, I would urge that there be some types of permanent protection granted to the two very sensitive environmental wilderness areas, the Teshekpuk Lake area and the Colville River area, and I would also like to see a Draft EIS which had a preferred alternative in it.

I understand the advantage of getting public comment on all of the options under consideration, and certainly there are even more that could be considered, but I find it difficult to address the subject without understanding what the preferred alternative would be. Thank you.

Fred Berdall (SF13) (Pages 56-59)

Hello. My name is Fred Berdall. I'm speaking for myself. I'm a resident of Oakland.

Like another previous speaker, I confess I only heard about this issue a week or so ago, and I'm concerned that these lands are national lands and most people, 99.99 percent of Americans, are unaware of this process, and I encourage you to do more to do outreach and publicity about what's at stake here because your clock is running fast, and there are hundreds of millions of Americans who have a responsibility to participate in this process.

Having had a couple of weeks to look over this document to the extent that I have, the most apparent omission has to do with this whole issue of what exactly is a National Petroleum Reserve, and

Comment SF13-001 (Page 57 Lines 8-15)

I think that you need to -- or should try to create some kind of a protocol with this document to actually say what are the kinds of conditions which would justify draining this particular reserve of oil and should there be specific and unique management conditions placed on oil which is classified as a national strategic reserve.

Response SF13-001

Please refer to Sections I.A and B, which have been rewritten to clarify the status of the NPR-A, the purpose, and the need for the IAP/EIS.

Comment SF13-002 (Page 57 Lines 16-21)

Third, I didn't see a mention of performance bonds. The environmental mitigation section, I don't know if that's common practice in the North Slope, but I hope you'll look at it if it's not in document, a large bond to ensure complete recovery to the extent possible.

Response SF13-002

Please see Response 0907-001 and the Preferred Alternative Stipulations 6 and 58 in Section II.C.7(a)

Living here in the Bay Area we see lots of impacts of the oil industry. I see oil running in to the storm sewers every time it rains. There's been oil washing up with dead birds on the beaches of Point Reyes for months and months.

A worker was killed in an explosion at Pescadero about a year ago.

I think myself, actually a former employee of Chevron, which may surprise some of the people that know me in this room,

Comment SF13-003 (Page 58 Lines 7-25)

but I don't share some of the confidence that the oil industry representatives have given about the inherent safety and environmental cleanliness of the oil industry in the North Slope, which I haven't seen, but I think that that's a reason to have a very comprehensive analysis of the impacts that this document apparently doesn't include, and that includes the shipping, trans-shipping.

I mean, the spill of the tanker, of the Valdez, was a part of the North Slope oil production, and in a way you're sort of segmenting the impacts and piece-mealing the process by only looking at what are the impacts of building a drilling pad or pipeline, when it's part of the whole shipment use and consumption and all the impacts that flow from that.

Response SF13-003

Please refer to Section IV.G through L and Appendix B.

And one other alternative which I think should be looked at in this document is a demand management alternative that would produce an equivalent supply of oil. How many miles per gallon extra would light utility vehicles, sports utility vehicles have to get in order to produce an equivalent supply of oil?

You know, we've been reading in the newspapers around here recently about Detroit announcing new technologies for green cars that get a hundred miles per gallon, and with that sort of exciting breakthrough on the horizon do we really need to risk the environmental consequences of this proposal?

Thank you very much for the opportunity to comment.

Norbert Riedy (SF15) (Pages 63-67)

I'm Norbert Riedy, Conservation Director for the Wilderness Society in California. I reside in Pescadero, California.

Five miles from my home is a coastal marsh that provides habitat for migrating ducks and shorebirds, pacific loons, pintails, shovlers, dunlin, pacific black brant, and widgeons, all species that make their way over the course of the seasons to Pescadero marsh and use habitat within the National Petroleum Reserve-Alaska.

These migrating birds create significant opportunities for wildlife observation for millions of people in the San Francisco Bay region and important economic benefits for the community of Pescadero.

Not only do local residents enjoy the waterfowl that visit the marsh on their journey along the pacific flyway, but wildlife watchers from throughout the region visit Pescadero Marsh.

These shorebirds, ducks, and other species provide us an enhanced quality of life and attract visitors who generate economic benefits to the community through business for restaurants, shops, and overnight accommodations.

The same experience is repeated over and over again throughout California. In the far north of the state these birds and many other waterfowl from the Arctic stop at the Klamath Basin refuges along their southern journey.

The economic benefits to the communities surrounding the Klamath Basin refuges is obvious when you learn that they sponsor wildlife festivals each year to celebrate the returning waterfowl.

In the Central Valley hunters enjoy duck and geese hunting opportunities that would not be the same without habitat provided by the NPR-A.

Farmers, hunters, conservationists, and government officials have been working for years to restore degraded wetland habitats in the Central Valley for waterfowl.

It would be a shame to ruin those efforts by eliminating essential habitat in the NPR-A for those same migratory birds.

To the south Speaker of the House Newt Gingrich recently announced his support for a program to help restore degraded waterfowl habitat in the Salton Sea National Wildlife Refuge.

Some of the same birds that make use of the habitat of the National Petroleum Reserve-Alaska will benefit from this new effort, as will the economics of the communities surrounding the Salton Sea.

The loss of habitat at the NPR-A translates into the loss of migratory birds for the Salton Sea National Wildlife Refuge and the loss of an economic and recreation resource for local communities.

Comment SF15-001 (Page 66 Lines 9-13)

The failure of the DEIS to recognize and consider the importance of the NPR-A's wildlife habitat to the people and economies of states such as California requires the development of a supplemental DEIS.

Response SF15-001

Impacts to wildlife, specifically migratory waterfowl, are so minute as a proportion of the species populations utilized by Californians and others in the lower 48, that analysis of the impacts of the plan on the people and economy of these states is unnecessary. For a general discussion of the appropriateness of a supplemental IAP/EIS, please see Response 1851-054.

This supplemental should include a true conservation alternative that provides protection for the Teshekpuk Lake Special Area and the Colville River Special Area, as well as a no leasing option.

Why lose the various benefits of the NPR-A's wildlife for the possibility of a four-month supply of oil?

Before draining the nation's strategic oil reserves and harming significant wildlife values, the U.S. should adopt a comprehensive national energy strategy that reduces our dependence on oil.

The Wilderness Society will be submitting detailed comments on the DEIS in writing.

Thank you.

Ken Freeman (SF18) (Pages 79-86)

Good afternoon.

My name is Ken Freeman. I'm the Executive Director of the Resource Development Council for Alaska.

I appreciate the opportunity to comment today on the Draft Environmental Impact Statement for the Northeast Section of the National Petroleum Reserve-Alaska.

The Resource Development Council is an Alaskan statewide membership-funded organization working on behalf of Alaska's basic industries, including tourism, fishing, oil and gas, mining and timber.

The Resource Development Council's membership includes the aforementioned industries as well as sectors which support those industries such as construction, labor, and other technical service providers, individuals, native corporations, and local communities.

The Resource Development Council urges the Bureau of Land Management to select Alternative E as its preferred alternative.

The NPR-A was established more than 70 years ago as a Petroleum Reserve, and Alternative E is the only land management option in the DEIS that reflects the management regime and dominant use Congress prescribed for this unit.

The Resource Development Council strongly believes the entire planning area should be opened for oil and gas leasing, especially those lands with the highest potential for oil and gas discoveries.

The National Petroleum Reserve in Alaska is not a previously unknown or new area. It has a history of lease sales, exploration, and drilling activity.

In fact, fifteen wells have been drilled during the course of its history.

With major advances in exploration and production technology, the prospects of finding commercial quantities of oil and gas are likely if industry is allowed to explore those lands within the Petroleum Reserve with the highest prospects.

The Resource Development Council supports the full leasing recommendation of Alternative E, it does not support the creation of new Special Areas or the expansion of existing Special Areas.

In addition, the Resource Development Council opposes a Wild and Scenic River designation for the Colville River as well as federal Wilderness designations in the planning area.

With advances in technology and the appropriate regime of environmental stipulations, the oil industry can develop oil and gas deposits in the planning area without harm to fish and wildlife and traditional subsistence uses of the land.

Mitigation measures, therefore, should take precedence over land set-asides.

Full leasing should occur in the entire planning area, including those lands within the Teshekpuk Lake and Colville River Special Areas.

These areas include much of the lands within NPR-A considered to have the highest potential for oil and gas resources, and, therefore, must not be excluded from leasing.

Alternative E contains more than 80 substantial and far-reaching environmental stipulations and mitigation measures to eliminate adverse impacts to fish and wildlife in these areas.

In fact, previous and ongoing environmental monitoring studies of existing North Slope oil and gas operations clearly demonstrate that the proposed stipulations will be fully effective in protecting wildlife populations.

Moreover, new advances in technology have greatly reduced industry's footprint, allowing for greater consolidation of facilities and the preservation of more acreage for wildlife habitat.

I want to make it perfectly clear that Alaskans strongly support oil and gas development in their state.

In fact, a recent survey revealed 86 percent of Alaskans believe oil and gas development has been good for the state and its communities.

As a result of oil revenues that flow into Alaska's treasury, many of our villages now have the modern amenities other Americans take for granted.

Alaska's larger towns and cities have also benefited from Prudhoe Bay with expanded infrastructure.

Alaska has used its oil revenues to build schools, health-care facilities, airstrips, ports, telecommunication networks, and power transmission facilities.

The State has also put emphasis on building the community infrastructure needed to provide basic indoor plumbing for drinking water and sewage disposal in rural homes.

This is an important need in Alaska where many villages still do not yet have basic water and sewer systems.

Alaska has done more than any other state to strike a balance between development and preservation. Seventy percent of all national park lands are found in Alaska, and not a single acre is open to oil development.

Alaska also accounts for 90 percent of all national wildlife refuge lands, and most of this acreage is off limits to development.

Alaska is also home to the two largest national forests. In the Tundras of Southeast Alaska more than two-thirds of the timber base is permanently closed to logging.

Alaska also contains 62 percent of the nation's federally designated wilderness, an area larger than the state of Utah.

Oil and gas development in the Petroleum Reserve would not diminish this wilderness block by one acre.

To put it in perspective, Alaska contains more wild lands in parks and refuges than all the land in Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Ohio, Delaware, and Maryland combined.

Nearly every acre of these lands will remain undeveloped, preserved forever in a natural state for future generations to enjoy.

Because of massive land withdrawals and other actions to protect the environment and wildlife, Alaskans can guarantee that most of Alaska will remain wilderness even if the state succeeds in tapping the full potential of its oil and gas, mining, timber, and fishery resources.

In closing, the Resource Development Council is confident in industry's ability to find and develop oil anywhere in the National Petroleum Reserve Alaska in an environmentally responsible manner.

I've made the trip to San Francisco today because this is a critical issue for me and members which I represent.

I'm a fourth generation Alaskan born and raised in Anchorage. I'm an outdoor enthusiast and live in Alaska because it is the wonderful scenic place it is, but in choosing to live there I must earn a living like everyone else that lives in Alaska. Responsible resource development and protecting the environment go hand-in-hand.

On behalf of the Council and the thousands of Alaskans our members employ I urge the BLM to choose Alternative E and expeditiously allow lease sales to occur as soon as possible.

Thank you very much for the opportunity to comment.

Dennis Kelso (SF35) (Pages 154-165)

Thank you for the opportunity to provide my comments tonight.

My name is Dennis Kelso, last name is K-e-l-s-o, representing myself.

I'm a Ph.D. candidate in energy and resources at the University of California at Berkeley, and before coming to graduate school here in the Bay Area I had been in Juneau for about a dozen years, and before that I lived in Fairbanks for a few additional years.

I have personal knowledge of the NPR-A resources and oil and gas development on Alaska's North Slope.

I served as Alaska Commissioner of Environmental Conservation for the four years that ended in December 1990.

I supervised monitoring and enforcement of environmental standards and lease stipulations for North Slope oil fields, worked with the field staff, and traveled to Prudhoe Bay in order to inspect environmental compliance and clean-up operations.

I was Commissioner when the Exxon Valdez spill occurred.

Prior to that job I was Deputy Commissioner for Fish and Game for four years, supervising the Game Division, the Subsistence Division, and the Habitat Division, and before taking on that role I was Director of the Division of Subsistence for three years and Regional Supervisor for the Northern Region, which included NPR-A.

My knowledge of subsistence comes not from familiarity with formal studies, but with experience in the areas near the planning area.

Before starting my natural resource work with the State of Alaska I served as public defender for the communities of Barrow, Nuiqsut, and Atqasuk where the NPR-A subsistence activities originate.

I wish to mention briefly upon the special resource values included in the planning area and then to spend a bit of time speaking about the adequacy of stipulations for exploration and development that appear in the draft document.

First of all and very briefly, the resource values of the Teshekpuk Lake and Colville River are special and should deserve stringent protection, but I'd like to remind us all that there are other resources that also deserve great care.

And in thinking about how to manage those resources I would suggest that not only their crucial role for ecological functioning of the area, but also their very important role in subsistence way of life for the communities that use NPR-A.

Comment SF35-001 *(Page 157 Lines 2-21)*

But what I'd really like to speak to, and I'll still be brief, although I have plenty that I'd love to say, is that if BLM decides to allow exploration and development, then stipulations for environmental protections should be strengthened and should incorporate applicable provisions identified by the Department of Environmental Conservation.

Now, DEC in 1990 prepared a report in order to anticipate and prevent problems that have occurred in other North Slope oil fields that were developed earlier.

This particular report was part of the overall state and federal dialogue about the Alaska National Wildlife Federation, Arctic National Wildlife Federation. And essentially what DEC did was to lay out the kinds of issues that had been fudged or smoothed over or not done properly in the earlier oil and gas lease sales.

(Page 158 Lines 22-25)
The steps outlined in the 1990 DEC report provide useful guidance, and many of the agencies suggestions should be adapted for NPR-A lease stipulations.

Response SF35-001

Stipulations proposed by BLM as a part of the Preferred Alternative for oil and gas operations in the NPR-A are the strongest environmental protection measures in place in Alaska today, and in many respects may be the strongest stipulations applied to any oil and gas operation in the world. We have reviewed the referenced 1990 DEC Waste Management Report and incorporated numerous suggestions. See Preferred Alternative Stipulations 1 through 17, 32, 38, 44, 58, 78, and 79.

(Beginning Page 157 Line 22) So by laying this out basically the agency provided some clear choices on how to do things right.

My basic message tonight is that the stipulations that have been applied in state and federal lease sales to date should not be considered sufficient.

The State may feel bound by the stipulations applicable to state lands by previous state comments on federal oil and gas leasing areas, but in order to protect the values of this area it's necessary to be more explicit and stringent than either the state or the federal government has been in other areas.

Let me give you one quick example. The disposal problems at Prudhoe Bay, although they have been known for 20 years, have still not been corrected. Hundreds of drums, many of them still containing unknown substances, remain on the surface.

Ten years have passed since the state and industry agreed to deal with these problems, but the job has still not yet been done.

Leasing of NPR-A, if the agency decides to proceed, should be done in a better way.

(Page 158 Lines 22-25 part of Comment SF35-001)

These stipulations are necessary in order to live up to the promise of doing the job in an environmentally responsible way in the Alaskan Arctic and avoid replicating the problems of other lease sales.

I'm not suggesting industry will necessarily do a bad job or that North Slope oil producers have not changed their methods in response to industry experience in other parts of the Arctic and developments in oil field technologies, nor am I suggesting that the State's stipulations and standards are always inadequate.

Instead, I believe that the industry and the regulatory agencies do have the technical capability to do an excellent job if the leasing decision is made, but the stipulation is NPR-A should set rigorous standards commensurate with the environmental resources of the area and should not be limited by the previous state or federal stipulations.

Comment SF35-002 (Page 159 Lines 21-25, Page 160 Lines 1-25, and Page 161 Lines 1-13)

And the second major point I'd like to make, that monitoring and enforcement are essential in order to ensure that state environmental standards have been met and that lease stipulations are carried out.

The state and federal agencies charged with enforcement of environmental provisions should be reimbursed for field activities.

My suggestion is a fund be established in to which the leaseholders pay in order to support these activities.

Without an adequate field presence by the regulatory agencies the stipulations and environmental standards will be unlikely to accomplish their objectives. We can't rely on agency budgets to provide the necessary field staff and support.

Even Governor Knowles' good faith efforts are insufficient because the Legislature makes the critical budget decisions.

The State of the Alaska and federal counterparts have excellent environmental field personnel, but it's unrealistic to assume they will have the resources to do the job, regardless of how well-drafted the stipulations are.

Again, I'm not assuming that oil field exploration and development companies are going to try to circumvent the rules, but a partnership is involved, and two of the partners must be the State Department of Environmental Conservation and the Environmental Protection Agency, as well as other agencies that have specialized knowledge like the Alaska Department of Fish and Game.

A fund to reimburse those agencies for reasonable expenses of field inspection, monitoring, and enforcement is a straightforward and minimalistic way of accomplishing environmental protection. Otherwise the standards and stipulations may be merely paper measures without the field support necessary to make them useful.

Response SF35-002

In regard to general enforcement, please see Response 1194-010.

The BLM has no legal authority to charge lessees additional fees for BLM actions that are designed to benefit the general public, i.e., protecting other resources, instead of benefitting the lessees themselves. The BLM is directed by the 1993 Office of Management and Budget Circular No. 25 (Title V, Independent Offices Appropriations Act of 1953, 31 U.S.C. 1111, and Executive Orders 8248 and 11511) to pursue fees for government services, and for the sale or use of government goods or resources, particularly those that benefit recipients beyond those accruing to the general public. If a lessee pays the bonus bid, rental and filing fees, and complies with the lease terms and stipulations, the contractual obligations of the lease are met.

I won't go through specific provisions. I have reviewed in some detail the stipulations from the draft document.

I'd like to just give you a couple of examples, though, of the kind of thing I'm talking about. The provisions need to be detailed and unambiguous.

One example of a provision that is sound and that should be retained is the provision on re-injection of muds and cuttings that's in solid and liquid waste handling, Item Number 13 B and C.

But others are well intentioned without having the kind of tight, explicit language that are necessary in order to be enforcible in the field.

Comment SF35-003 (Page 162 Lines 5-8)

Examples in the documents include also in the solid and liquid waste handling section, Number 3, which is unclear about whether land fillings would be allowed within the planning area,

Response SF35-003

This comment is addressed in Preferred Alternative Stipulation 3, which prohibits burial of garbage.

Comment SF35-004 (Page 162 Lines 9-13)

and Number 4, which says areas of operations shall be left clean of all debris without being specific about what time limits are involved and what level of clean-up is really demanded.

Response SF35-004

Timing of cleanup will be addressed in the Plans of Operation.

Comment SF35-005 (Page 162 Lines 14-19)

Similarly, in the section called oil field abandonment, Item number 59 does not make clear what kind of time limits we're talking about, and I might remind you there are still oil field structures including wooden drilling derricks that are standing in Prudhoe Bay.

Response SF35-005

As stated in Alternatives A through G Stipulation 59 (Preferred Alternative Stipulation 58), facilities shall be removed and sites rehabilitated upon field abandonment, or the expiration of the lease.

So the necessity of being clear, explicit, and stringent is, I think, borne out by past experience.

I'd like to conclude by observing that the State of Alaska has described its position as doing it right, and I believe that Governor Knowles genuinely supports oil and gas exploration in a responsible way.

Marilyn Heiman, the Governor's representative here tonight, has worked as hard as anyone in trying to make sure that doing it right actually means something.

When she was a legislative aide, she made enormous progress in giving some real teeth to the kinds of provisions that ought to apply on both state and federal lands when oil and gas leases are contemplated, but to do it right requires that we take more care in this part of the NPR-A than the state and federal government have accomplished in other leasing areas.

Industry, government, and the public have learned a great deal since the exploration of Prudhoe Bay, and before that, of course, in Alaska in Cook Island.

We have the opportunity to build on those experiences. Neither state nor federal oil and gas leasing now provides an adequate blueprint.

In the NPR-A doing it right means strengthening of the stipulations, using the expertise already available in the state environmental protection agencies.

One mechanism for doing that is to use the 1990 DEC report.

What happens in the state system is that the state Department of Environmental Conservation lays out what it believes is necessary to do the job, but by the time it filters through all the agency negotiations and the clearing house process and becomes a state position endorsed by the Governor, it's been largely filtered out of a lot of teeth, and so I'm not suggesting that the Governor's Office is somehow duplicitous.

I'm just saying there's a process of trading off and negotiating that often results in the kinds of recommendations that you get from the state as a whole being much weaker than they would have been had they come from the agency responsible for carrying out environmental policy.

So I would suggest that you go right to the source and deal with DEC, the Department of Fish and Game, and other agencies that have real environmental enforcement responsibility.

And, finally, funding adequate and continuing levels of monitoring inspections and enforcement are absolutely essential in order to get the job done.

And I would submit that doing it right in NPR-A really means doing it better.

Thank you.

MR. MOHORICH: Thank you.

MS. WISELY: Mr. Kelso, did you give us the formal title of the report that you referenced?

MR. KELSO: I did not, and I don't have it with me, but it is -- it was prepared in 1990 by the Department of Environmental Conservation, and it was prepared for the Governor and for the Commissioner in order to participate in the so-called 1002 process going on with respect to the National Wildlife Refuge.

MS. WISELY: Thank you.

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WAINWRIGHT PUBLIC HEARING TESTIMONY — VERBATIM EXCERPTS AND RESPONSES TO COMMENTS

Terry Tagarook (WA06) (Pages 15-16)

My name is Terry Tagarook. I'm a resident of Wainwright. And I'm going to speak in English since we have two people up there that will interpret for the ones that don't understand what I say. But most of you should know what I'm going to say.

I think the people that are affected most would be Nuiqsut, and since we are on the west side of them it would be pretty good if they opened it up because it won't affect us. No, that's not true. The Inupiat, all people have always shown respect, respect for each other. Respect for the land, the water fowl, the game and the fish that we depend on. I think that there should be some consideration in showing respect to our land before any development is established.

One rule of thumb they always told us, respect the animal, respect the land. And the people like the oil companies did the same. I don't think I would disagree with them either if they showed respect to the land and our water fowl and our game in that area.

Comment WA06-001 *(Page 15 Lines 23-25 and Page 16 Lines 1-4)*

What I -- a concern that came to me is what affect will it have on the Western and Teshekpuk herd, the caribou that we depend on, would the oil lease -- what was going to happen. These are concerns that our people are concerned about. But most of all, we like to show respect to the people at Nuiqsut and back them up in their decisions in the oil lease sale if it should happen.

Response WA06-001

We have made an effort to incorporate the views of the people of Nuiqsut and the North Slope, both in our analysis of impacts and in the development of the Preferred Alternative in Section II.C.1. Please refer to Section IV for a description of impacts on the caribou herds.

And I hope you understand what I'm saying that you must show respect to the people and the land they live on and that is all I have to say.

Winfred Ahvakana (WA09) (Pages 17-18)

My name is Winfred Ahvakana and I'm here at Wainwright, resident of Wainwright. If I start talking it will be about 9:30 so bear with me on this.

.....supported the village of Nuiqsut for their subsistence use of that area. He, himself, had hunted Teshekpuk Lake and all over in that area and within the rivers there also. And there's various types of game available in that area because it has never been touched by oil and gas.

In 1970, along with Edgar Toyana (ph), he went up river on Colville and met the woods there at Nugaluk. And there were doing subsistence hunting around that area.

Comment WA09-001 *(Page 17 Lines 24 & 25 and Page 18 Lines1-9)*

He supports that area of subsistence hunting and would recommend here very strongly that if -- the alternative two in the area of where it has been marked on the Ikpikpuk River and all the rivers there that are marked green, that he would recommend that a larger buffer zone be placed in those areas so that that area -- those areas that are used for subsistence by the people of Nuiqsut could be used for them.

I'm sure that the other areas like the lakes that are used for harvesting fresh water fish would also be -- have a buffer zone around those areas.

Response WA09-001

Please refer to the Preferred Alternative Sec. II.C.1.

WASHINGTON D.C. PUBLIC HEARING — VERBATIM EXCERPTS

Dr. William Sladen (DC06) (Pages 35-37)

Nice to see so many young people here.

My name is William Sladen, Director, Environmental Studies at Airleigh, Virginia, and Professor Emeritus, Johns Hopkins University. I've been involved in waterfowl research, especially swans and geese, for over 50 years. I am familiar with the entire North Slope of Alaska, including the Arctic National Wildlife Refuge, Prudhoe Bay oil field, and NPRA, having surveyed and banded waterfowl there and as far east as the Anderson River delta.

The Colville River and delta and Lake Teshekpuk areas are among the most diverse and little known areas in Alaska. They should be preserved in their present pristine state.

In the summer of 1970 -- that's a long time ago for some of you young people -- I was air-surveying tundra swans on the northern slope with U.S. Fish and Wildlife pilot-biologist Jim King when, to my utter surprise, I saw a colored dye swan below. The bird was in molt, shedding its golden-dyed feathers across the tundra. Banded near Annapolis on the Chesapeake Bay almost 4,000 miles to the southeast, it was our first sighting of a tundra swan on the northern slope of Alaska.

For the next 10 years, until the birds lost their neck bands and thus freed themselves from our scientific pryings, we re-sighted these individuals and their young either in their breeding grounds in the Colville or on the eastern shore of the Chesapeake Bay even on migration.

From the late 1960's to the early eighties, before and during the establishment of the Prudhoe Bay oil field, my students at Johns Hopkins and I neckbanded 744 tundra swans on their northern tundra breeding grounds, including 204 in the Colville and NPR-A. Only two -- that is 0.5 percent -- of the 416 subsequently re-sighted were seen in the West. The rest migrated to winter in Maryland, Virginia, or North Carolina.

Our swan research demonstrated what we all need to shout from the housetops: We are all connected in the ecological web of life. Yes, even what affects the northern slope of Alaska can have an impact on us here on the Chesapeake Bay. Just let me point that out. What the Natives and what everybody else does affects us and what we do in the Chesapeake Bay affects them.

I have read the statement with interest. I am mindful of the enormous amount of research and debate that went on before the Prudhoe Bay oil field was permitted. It would have been a disaster if some of the recommendations made by wildlife biologists had not been inplemented. However, the impression I get from this impact statement is that it has been rather hastily constructed, with inadequate studies of the area.

Please be sure that Rod King, who is a U.S. Fish and Wildlife biologist's, statement be a part of the record. I approve and support his excellent statement. Just for the reasons he give, the area should be protected. His statement, however, covers only the bird populations. For example, little is reported on the botany. We need to know much more about the entire ecosystem and more particularly how this fragile tundra and its sensitive wildlife populations can withstand the perturbations of oil exploitation.

I recommend a more thorough impact statement be made involving the U.S. Fish and Wildlife Service in cooperation with independent conservation biologists before this is opened up to the oil.

Thank you.

Martin Thomas (DC08) (Pages 39-42)

My name is Martin Thomas. I'm representing the American Council for an Energy Efficient Economy. It's my pleasure to offer comments on behalf of the American Council for an Energy Efficient Economy on proposed leasing in the National Petroleum Reserve-Alaska. We will also be submitting written comments.

I'm here to discuss alternatives to tapping these reserves in this highly sensitive American wilderness. Strengthening one single policy, a policy already in place and working, will make drilling in the petroleum reserve unnecessary. This policy is the Corporate Average Fuel Economy standards, or CAFE. In place since the mid-1970's, CAFE has saved Americans millions of barrels of oil every year and saved consumers billions of dollars. The standard, 27.5 miles per gallon for cars, is the same as it was in 1985, despite 12 years of technological innovation in the automotive industry. The standard for trucks is 20.7 miles per gallon. This is virtually unchanged from the standard of 20.5 10 years ago.

U.S. fleetwide fuel economy has been stagnant or declining for over 10 years. Simply raising CAFE to levels which engineering studies show is not only technologically feasible, but is cost effective, will save much more oil than by all estimates is in the reserve. Our calculations indicate that net oil savings by the year 2030 from raising CAFE standards to 45 miles per gallon for cars and 34 miles per gallon for light trucks will save over 36 billion barrels of oil. This compares to the highest DEIS estimate of 2.2 billion barrels of oil. 500 million barrels of oil is the low estimate and a reasonable midrange estimate from the USGS is about 900 million barrels of oil.

What this means is that by strengthening CAFE standards we can save over 35 times the amount of oil that we can reasonably expect to recover from the petroleum reserve. This is a level which can be achieved with existing conventional technology, much of which is in use or ready to be deployed by automakers.

The added cost to a vehicle for this technology is recoverable through fuel savings by the consumer in less than 5 years. Implementing high tech electric and hybrid drive trains and eventually renewable energy, possibly fuel cell vehicles, which are non-hydrogen, will save even more oil and make drilling in the reserve even more of an unneeded folly.

Raising CAFE to these modest levels will have other benefits as well. Upstream emissions, emissions from drilling, transportation, refining gasoline and filling up fuel tanks, all are directly proportional to fuel use. The less gasoline we use, the cleaner our air will be.

Under the 45-34 MPG scenario, U.S. greenhouse gas emissions in 2012, the date set for reductions by the Kyoto protocol, will be reduced by 150 million metric tons of carbon over a business as usual scenario. To put this in perspective, total U.S. emissions in 1990 were about 1.340 million metric tons of carbon. So 150 million metric tons of carbon is about 10 percent of the 1990 levels.

Can the automakers build cars this efficient? The recent Tokyo and Detroit auto shows confirm that they can. Ford announced the P2000, a car which gets 63 miles per gallon using a lightweight body and advanced drive train. Toyota is now selling, not a prototype, but actually selling, hybrid electric cars in Japan that get 65 miles per gallon. This car costs about $17,000, not much more than a comparable

conventional gasoline vehicle. Orders in the first month for this vehicle were three times what they were expecting and they are now going to double production.

We have a crucial choice to make: continue polluting land, air, and water and destroying the Arctic wilderness, or make all of this unnecessary with effective energy policies. We urge the Bureau of Land Management not to lease any lands in the NPR-A.

Thank you.

Michael Carroll (DC09) (Pages 42-43)

Good evening. My name is Michael Carroll. I'm here as a concerned citizen from Boise, Idaho.

I would like to focus your attention on the idea and the ideal of America's Arctic. For most of us, that's what the Arctic, our Arctic, is and may always be. Many of us may never have the opportunity to stand on the northernmost edge of our country and look out over the land that is truly one of our last great wild places.

Whether I am able to travel there are not, I cherish the idea that a wild place like America's Arctic exists. I enjoy the idea that it is a place where massive polar bears can roam the land and magnificent tundra swans and snow geese can feed and continue their age-old migration cycle. I enjoy the idea that this place exists.

The NPR-A, America's western Arctic, is an ideal place, one that has been set aside as a reserve, and I'd like to remind you of that. And whether you see the western Arctic as an ideal spot for oil production or an ideal place for preserving wildlife and conserving our natural heritage, the fact remains that this area is a reserve and there is absolutely no compelling reason for us to drill into this reserve.

Our Nation has no sound energy policy, no oil crisis, no need for additional oil. And at a time when our world is negotiating ways of curbing emissions from fossil fuel use, I am appalled that we would even consider drilling into one of America's truly wild areas.

An ideal Arctic does not include industrial complexes and the miles of roads that go along with oil production. An ideal Arctic does not include miles of pipelines that disturb migration routes and destroy habitat.

I am an idealistic person. I'd like the western Arctic to remain an ideal place. That is to say, I want the western Arctic to remain free from oil drilling.

Thank you.

Jeremy Scheaffer (DC11) (Page 47)

My name is Jeremy Scheaffer and I'm a concerned citizen from Findley, Ohio. I'm strongly opposed to oil leasing in the NPR-A.

When the resource was established in 1923 it was intended to be tapped only at a time of pressing national need. I do not believe that lining the pockets of executives and lobbyists of multinational oil companies should be considered a pressing national need. At the same time oil companies argue that the Nation needs this oil, millions of barrels are being shipped to Asia, world oil prices are falling, and U.S. automobile fuel efficiency is declining.

We do not need this oil. Multinational companies want this oil. There is a big difference between need and greed. I urge you to select alternative A, the no-leasing alternative.

Thank you.

Paul Fuhs (DC22) (Pages 78-80)

Thank you, gentlemen. My name is Paul Fuhs and I'm here as a citizen of the United States. I'm not representing any organization. I do live in Alaska. I've lived there most of my life. Actually, I guess I moved there when I was five, so I like to say: Well, I wasn't born there, but I got there as quick as I could.

I used to be the mayor of a fishing village in Alaska for several years. In Alaska sustainable development means that our industries can coexist with each other and in fact they're interdependent on each other. For instance, if we didn't have oil development and fuel our fishing boats couldn't even go out and fish.

I'd like to speak here in support of alternative E today. We've heard a lot about a lot of hypothetical impacts, but fortunately we have a 25-year track record in Alaska of development on the North Slope, and we've found that those hypothetical impacts didn't occur. The caribou herds expanded 600 percent during that time. No appreciable damage to wildlife.

The other thing that's good about oil development or developments like that is that when they're done, if you have proper reclamation language and those type of elements in your leases, when they're done you don't have permanent loss of habitat. It's not like farming, that takes it forever, or this area that we see here from New York City to Washington, D.C., that's permanently populated and will be eliminated from habitat forever. I can guarantee you that, even if there's oil development on the North Slope of Alaska, it will never look like New Jersey.

There's been some national policy issues raised and I think that's the most important consideration. We don't have an energy policy in this country. That's too bad. One of the important elements that's missing is how are we going to produce the energy that we need for this country to keep this room warm, run these lights, drive home when we get out of here. You've heard about the Internet? Where's the energy going to come from to run the Internet? What does it take to build a computer? All these things that we take for granted, and this given the fact that more than 50 percent of our oil now comes from foreign sources.

I think the most important idea I want to get across is if we can't produce energy in our own country, what's the net effect of that? We're pushing it overseas to countries like Russia, the former independent states, Latin America, that have far lower environmental standards than we do. How's that protecting the environment?

I think we're going in reverse with that, and at some point we have to get to the place where we can take pride in our environmental accomplishments in this country, rather than whip ourselves with the guilt of just wanting to be productive people and produce the energy we need under the highest environmental standards in the world. I don't see what's wrong with that.

So in any case, I would encourage you to proceed with alternative E, give us a chance to do this as we have in the past, under the highest environmental standards.

And I appreciate this opportunity to speak to you tonight. Thank you.

SECTION VI

CONSULTATION AND COORDINATION

VI. CONSULTATION AND COORDINATION

A. INTRODUCTION: Management of public lands on Alaska's North Slope, including the Northeast NPR-A Planning Area, is of considerable public interest, not just within the State of Alaska, but throughout the Nation. Expertise on the resources of the planning area is also widely dispersed. People knowledgeable about the resources are found in many agencies of the Federal, State, and North Slope Borough (NSB) governments and in academia, environmental interest and study groups, industry, and the people who call the North Slope home.

The BLM has reached out to all these groups to obtain information on the issues and the resources of the planning area. The following discussion begins by summarizing this effort focusing on five elements: our formal "scoping" work, a series of workshops and meetings held to pool resource information and develop ideas for future management, multiple reviews of drafts of parts of the IAP/EIS, special cooperative arrangements with the State and the NSB, and publications that have kept the public informed of our progress. The section then concludes with a brief description of the groups contacted during the planning process and a list of the BLM and MMS authors of the plan.

B. FORMAL SCOPING: The formal scoping period began when BLM published a Notice of Intent (Notice) to prepare the Northeast NPR-A IAP/EIS in the *Federal Register* on February 13, 1997. This initiated a 30-day public scoping period. Scoping comments also were requested through the NPR-A internet web site (http://aurora.ak.blm.gov/npra/); comment sheets distributed at public meetings; advertisements in the *Anchorage Daily News*, *Arctic Sounder*, and Fairbanks Daily News-Miner;, announcements on KBRW public radio (Barrow); and the *npr-a report*, a newsletter distributed by the BLM-Alaska Office of External Affairs. (The newsletter has since been renamed the *npr-a update*.) These announcements requested public comment on the wide range of resources of the planning area and for ideas on its future management. The Notice also included a call for nominations from the oil industry for lands within the planning area to be considered for oil and gas leasing.

During the formal scoping period, BLM met with a wide range of interested parties. This included representatives of environmental groups; the oil industry; North Slope village and corporate leaders; and leaders of NSB, State, and other Federal land-management and resource-protection agencies. Public meetings were held in Barrow, Atqasuk, Anchorage, Fairbanks, and Nuiqsut during March and April 1997. These meetings were facilitated and electronically recorded and subsequently transcribed into a written record. An interpreter was present at the meetings in the North Slope communities. More than 175 people attended those meetings, and 101 written comments were received during the scoping period. The formal public scoping period ended April 18, 1997, following an extension to accommodate scheduling conflicts that delayed the Nuiqsut public meeting.

C. WORKSHOPS AND MEETINGS: The BLM and the Minerals Management Service (MMS), which has helped BLM develop the IAP/EIS, have held four workshops or meetings to obtain information and/or develop alternatives. The first of these was the *NPR-A Symposium* held April 16-18, 1997, in Anchorage. It was convened to provide BLM and MMS with the most current information on resources and their uses in the northeast planning area and the potential impacts that may incur from various land use activities. More than two dozen speakers from government agencies, academia, industry, and private consulting companies gave presentations during the three-day symposium, which was attended by more than 130 people. A synopsis of the sessions was published in the *NPR-A Symposium Proceedings: Science, Traditional Knowledge, and the Resources of the Northeast Planning Area of the National Petroleum Reserve-Alaska* (MMS, 1997).

The following week, BLM held a *planning meeting* with representatives from MMS, the Fish and Wildlife Service (FWS), Alaska Department of Natural Resources, Alaska Department of Fish and Game, and the NSB to review the scoping issues and formulate management alternatives. The first preliminary draft of the alternatives resulted from this meeting.

The *Teshekpuk Lake Waterfowl/Caribou Impact Analysis Workshop* was held May 21-22, 1997, in Fairbanks to provide BLM with specific guidance for developing maximum protective measures for waterfowl and caribou in the Teshekpuk Lake area under an alternative that would allow for economically feasible oil and gas leasing in that area. On the first day, academic, industry and other nonagency biologists and other specialists presented pertinent background information. On the second day, there was one panel each for caribou and waterfowl. These panels consisted of Federal, State, and Borough government representatives with expert knowledge of waterfowl and caribou biology and wildlife interactions with North Slope oil- and gas field operations. The FWS provided invaluable GIS data on waterfowl. A summary of these proceedings can be found in Appendix E.

An *NPR-A Subsistence Impact Analysis Workshop* was held August 19-21, 1997, in Nuiqsut to provide BLM with specific guidance on protective measures for subsistence resources and users under alternatives which would allow oil and gas leasing. A workshop panel consisted of Federal, State, Borough, and tribal government representatives from Barrow, Atqasuk, Nuiqsut, and Anaktuvuk Pass with both scientific and traditional knowledge of subsistence resources and their uses in the planning area. Public meetings were held in Nuiqsut and Barrow in conjunction with the subsistence workshop to solicit additional information from local residents for the panel's consideration. A summary of these proceedings are included in this document as Appendix F.

D. PEER REVIEWS: The BLM and MMS implemented a formal peer review process for the preliminary draft EIS that included specialists from the U.S. Geological Survey (including its Biological Resources Division), FWS, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, National Park Service, Bureau of Indian Affairs, U.S. Forest Service, National Weather Service, Natural Resources Conservation Service, Office of Environmental Policy and Compliance (USDOI), State of Alaska, and the NSB. The peer reviewers examined early drafts of Sections II, III, and IV and responded in writing with corrections and suggestions for changes. In addition authors and reviewers engaged in individual conversations before, during, and after the review to exchange information. Some sections were sent out for a second series of reviews. Prior to going to print, staff of the FWS, State, and NSB joined with those of BLM and MMS to review of the entire document. The comments at all stages of the review have been constructive and exceedingly helpful. The BLM and MMS, not the reviewers, though, remain responsible for the descriptions of the environment and the impacts of the alternatives, and only BLM is responsible for the range of alternatives.

E. STATE AND NSB COOPERATION: Early in the IAP/EIS process, BLM invited the State and the NSB to join with us in this planning effort. The Borough helped coordinate scoping meetings, the subsistence workshop, and other contacts on the North Slope, provided much of its unique GIS data and research reports, and regularly consulted with BLM's leadership on the plan. The BLM also funded a new State position to assure smooth communication of state concerns and information between its managers and resource specialists on the one hand and the BLM/MMS planning team on the other. The State's coordinator was based in BLM's offices in Anchorage and was integrated into the planning team.

F. PUBLICATIONS: The BLM has distributed four issues of the *npr-a update*. The first, published for the formal scoping period, introduced the plan and solicited comments. The second reported to the public on the issues raised during scoping. The third newsletter updated readers on the plan, including Secretary Babbitt's visit to the NPR-A and the North Slope. The fourth issue of the *npr-a update* announced the publication of this draft IAP/EIS and the public meetings to be held to obtain comments on it. In addition, the BLM has periodically updated its NPR-A internet web site initiated during formal scoping. The draft IAP/EIS also will be available over the Internet.

G. AGENCIES AND ORGANIZATIONS CONSULTED: The following agencies and organizations have been contacted during the planning process.

Federal Agencies
- U.S. Department of Agriculture
  - National Resources Conservation Service
  - U.S. Forest Service
- U.S. Department of Commerce
  - National Marine Fisheries Service
  - National Weather Service
- U.S. Department of Defense
  - U.S. Army, Corps of Engineers
- U.S. Department of Energy
- U.S. Department of the Interior
  - Fish and Wildlife Service
  - Minerals Management Service
  - National Park Service
  - U.S. Geological Survey
- U.S. Environmental Protection Agency

State of Alaska Agencies and Commissions
- Department of Fish and Game
- Department of Natural Resources
- Department of Regional and Community Affairs
- Department of Transportation/Public Facilities
- Division of Governmental Coordination

University of Alaska, Institute of Social and Economic Research
University of Alaska, Natural Heritage Program

Municipal Governments
North Slope Borough
City of Anaktuvuk Pass
City of Atqasuk
City of Barrow
City of Kaktovik
City of Nuiqsut
City of Wainwright

Native Alaska Organizations
Alaska Eskimo Whaling Commission
Alaska Federation of Natives
Arctic Slope Native Association
Arctic Slope Regional Corporation
Atqasuk Inupiat Corporation
Barrow Whaling Captains Association
Inupiat Community of the Arctic Slope
Native Village of Atqasuk
Native Village of Barrow
Native Village of Nuiqsut
Kuukpik Corporation
Ukpeagvik Inupiat Corporation

Following is a partial list of other organizations (for a complete mailing list, contact:
Bureau of Land Management, Office of External Affairs (912), 222 W. 7th Ave., Anchorage, AK 99513)
Alaska Center for the Environment
Alaska Miners Association
Alaska Oil and Gas Association
Alaska Outdoor Council
Alaska Visitors Association
Alaska Wildlife Alliance
Alyeska Pipeline Service Company
Anardarko Petroleum Corporation
ARCO Alaska
BP Exploration
Chevron USA
Cominco Alaska
Ducks Unlimited Inc.
Exxon
Greenpeace
National Audubon Society
Northern Alaska Environmental Center
Phillips Petroleum
Sierra Club
The Nature Conservancy
Trustees for Alaska
Union Oil Company
Union Texas Petroleum Company
Wilderness Society
Elected Officials
U.S. Senator Ted Stevens
U.S. Senator Frank Murkowski
U.S. Representative Don Young
Governor of Alaska Tony Knowles
Alaska State Senators
Alaska State Representatives

H. LIST OF PREPARERS: The portions of Sections III and IV written by the following specialists are indicated in parentheses. AFO=Anchorage Field Office, ASO=Alaska State Office, NFO=Northern Field Office.

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APPENDICES

A Inventory and Monitoring

B Effects of Low Probability, High-Effects Very Large Oil-Spill Events

C Endangered and Threatened Species Consultation

D Section 810 of ANILCA, Findings and Evaluations

E Proceedings of the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop

F Northeast NPR-A Integrated Activity Plan EIS Subsistence Impact Analysis Workshop Proceedings

G Wild and Scenic Rivers — Management Objectives and Standards and Assessment Process

H Visual Resource Management

I The Inupiat People's History and Future with regard to the National Petroleum Reserve-Alaska (NPR-A) A 1997 Perspective from the North Slope Borough

J Draft IAP/EIS Commenters

APPENDIX A

Inventory and Monitoring

INVENTORY AND MONITORING

During the life of this plan, inventory and monitoring would be used as a management tool to determine the status of the various resources within the area, to ensure compliance with plan decisions, to measure the effectiveness of the decisions, to ensure compliance with stipulations that are attached to land use authorizations, and to evaluate the effectiveness of the stipulations at accomplishing the purposes for which they are required. A monitoring program to accomplish these purposes would be developed and implemented. The most attention would be given to those activities that have the highest potential for environmental impact and those that are the most controversial. The results of these monitoring activities would be produced in reports. Any monitoring program that is developed would be done in cooperation with the State of Alaska, Department of Fish and Game; the U.S. Department of the Interior, Fish and Wildlife Service; and the North Slope Borough (NSB), as appropriate.

The following discussion provides the primary objectives for and brief descriptions of the types of inventory and monitoring that could occur for the surface resources the Bureau of Land Management (BLM) manages within the planning area.

1. **Cultural:** Inventory and monitoring of cultural resources would be conducted primarily to ensure that all sites eligible for the National Register of Historic Places (National Register) and other significant sites are preserved. Traditional knowledge is an important factor in the identification and interpretation of these sites. Inventories related to development activities would focus on specific locations, while inventories related to building a database of known sites would focus on more general areas—usually those expected to contain the highest numbers of cultural resources, such as good viewpoints, river banks, and game-concentration points. After a site is discovered through inventory/survey, it is evaluated against criteria for nomination to the National Register to determine its level of significance. Many of these sites would be useful in research, education, and interpretation to preserve the cultural heritage of North Slope residents.

Local concern over the identification and protection of cultural and historic places was exemplified in the comments made by Mr. Leonard Lampe at the public scoping meeting held in Nuiqsut.

2. **Lands:** The primary objective of an inventory and monitoring program for lands is locating through survey and subsequently conveying the Native allotments and other entitlements that exist under the Alaska Native Claims Settlement Act. The second objective is establishing the location and ownership of existing structures, primarily cabins, within the planning area. This information will be used to evaluate potential conflicts between existing land uses and potential oil and gas exploration and development. This information will also be used in studies and efforts by the BLM, working with the NSB, to address those structures that are on Federal public lands without authorization from the BLM.

3. **Fish:** Inventory and monitoring of fish would establish baseline information of fish populations, when necessary. A cooperative effort between agencies and disciplines to establish an issue-based, long-term monitoring program would be undertaken for activities where oil and gas exploration and development occur. This would include monitoring the effectiveness of mitigating measures through limnological, biological, and physical habitat studies. Monitoring of public-participation recreational and subsistence fisheries would be done. See the subsistence discussion in paragraph 7 for a discussion of how fish and subsistence inventory and monitoring are related.

4. **Hazardous Materials:** The BLM would conduct and maintain an inventory of lands to identify currently unknown hazardous materials sites. Research would be conducted to identify locations of past spills or dumps. Record searches and interviews with local residents and government personnel would be conducted. During oil and gas exploration and development, BLM would monitor activities to ensure compliance with permit requirements.

5. **Paleontology:** Inventory and monitoring of paleontological resources would be conducted primarily to ensure that all significant sites are preserved. Inventories related to development activities

would focus on specific locations, while inventories related to building a database of known sites would focus on more general areas, usually those along the Colville and Ikpikpuk rivers where known concentrations of paleontological specimens exist. After a site is discovered through inventory/survey, it is evaluated to determine its level of importance. Many sites would be useful in research, education, and interpretation to preserve the cultural heritage of North Slope residents.

6. **Recreation:** Commercial recreational use will be monitored for adherence to permit stipulations. The BLM also will monitor general recreation use that may occur within the planning area and on the adjacent rivers and sites where BLM has management jurisdiction. Monitoring will focus on both the impacts of recreation on other surface resources and the effects of activities, such as oil and gas exploration and development, on recreational values. As part of the monitoring program, BLM may conduct visitor-use surveys to ascertain what issues or concerns users of the area have.

7. **Subsistence:** Inventory and monitoring would assist in accomplishing the goal of conserving healthy populations of fish and wildlife resources that are important for subsistence purposes. Inventory-based data would be collected for caribou, moose, fish, furbearers, and various waterfowl. Incidental sightings of muskoxen and grizzly bears would provide data on these species. Of primary interest would be data on population trends and distributions for all species and sex and age composition for caribou and moose. Gaining an understanding of the relationship of species to their habitat and the amount of habitat needed for individuals or breeding pairs also would be very important.

For many residents of the North Slope, subsistence is the most important issue addressed in this document; and concern about the possible effects of the management actions being considered in this document was a consistent theme during public meetings. One major recommendation that came out of a subsistence workshop panel held in Barrow and Nuiqsut as part of the planning process was the development of a subsistence-monitoring program. The approach to inventory described here is a major part of that program. Under alternatives B through E, the BLM will work with the Subsistence Advisory Panel and the NSB to develop a program to monitor the effects of oil and gas development on subsistence users.

8. **Vegetation:** Inventory and monitoring are important strategies in meeting the objective of identifying key habitats for various wildlife species, including waterfowl, and conserving populations of rare plant species. The BLM soon will complete a digital land-cover classification of the study area. This database will be analyzed in conjunction with other data on observed occurrence of wildlife species and known rare plant locations to identify correlations that may exist. This information will then be used to identify critical habitats, potential habitat expansion areas, or areas that are likely to sustain rare plants. These areas can then be sampled to determine the validity of the correlations and interpretations. Monitoring of vegetation, either through remote sensing or on-the-ground studies, would be conducted to detect any change over time. Site-specific surveys to locate populations of rare plants would occur ahead of any surface development.

9. **Water Resources:** Inventory and monitoring would help to provide data that are necessary to minimize undue and unnecessary degradation to water resources within the planning area and adjacent watershed. Inventories would identify the water-resource availability and requirements for the planning area and adjacent watersheds. Hydrology and limnology will be correlated to critical aquatic habitat areas for fisheries and waterfowl. Both fieldwork and Geographic Information System mapping would be necessary. Field studies would take the form of instream flow and stream gaging in high-resource-value areas, and the causes of change in water quality would be identified when possible.

10. **Well site Management:** Inventory and evaluation of previously drilled oil and gas exploration wells would determine whether they should be plugged or left open to support ongoing research programs. Geographic Positioning System locations are needed along with records of the location of wells in relation to significant physiographic and human structures; see Section III.A.1.f of this environmental impact statement.

11. **Wildlife:** Inventorying and monitoring species are essential to managing lands to

maintain healthy wildlife populations. Federal, State, and NSB agencies focus their separate and joint inventory work in the planning area on certain species based on the agencies' missions and the results of public interest. Ongoing inventories in which BLM is a participant include caribou calving, composition and movement of the Teshekpuk Lake herd, raptor breeding along the Colville River, and breeding land birds in the Umiat area. Funding permitting, BLM might participate in additional future inventorying and monitoring of population demographics of spectacled and Steller's eiders, moose, and muskoxen. See the subsistence discussion in paragraph 7 above for a discussion of how fish and subsistence inventory and monitoring are related.

APPENDIX B

Effects of Low Probability, High-Effects Very Large Oil-Spill Events

Section A — Well Blowout and Pipeline Rupture

Section B — 200,000 bbl Tanker Oil Spill

A. EFFECTS OF A WELL BLOWOUT AND PIPELINE RUPTURE:

An oil spill is the single event with the greatest potential impact to the environment during exploration and development. An Oil Spill Contingency Plan is required prior to approval and conduct of any drilling activity to address the protection of waters and landforms and meet impacts produced as a consequence of accidental spills.

In the Introduction and Basic Assumptions for Effects Assessment section (Sec. IV.A) of this document is a section on oil spills. Based on data obtained on the history of spills on the North Slope, estimates are made as to the number, types, and quantity of spilled crude and refined oil that can be anticipated under the various alternatives. The environmental consequences of these estimates are contained in the discussions by resource throughout the remainder of Section IV.

The purpose of this section is to provide scenarios for low-probability, high-effects, oil-spill events. Two hypothetical cases are considered in this section: a well blowout and an oil-pipeline rupture. A third hypothetical tanker spill case is considered in Section II of this Appendix. These scenarios apply to each of the alternatives described in the EIS

Well Blowout Assumptions: *The Alpine Development Project: Environmental Evaluation Document* (September 1997 Revision), prepared for the U.S. Army Corps of Engineers by Arco Alaska, Inc. et al., identified a well blowout as the "reasonable worst-case" oil spill. In that document, it was estimated that the spill would amount to 1,000 bbl/day. It also was stated that a blowout typically would be controlled within 3 days using heavy muds or other "top kill" intervention.

For purposes of analysis in this IAP/EIS, it was assumed that a relief well would need to be drilled, and that the onsite drill rig would be damaged. For this scenario, an estimated 34 days could elapse prior to controlling the well. An estimated 34,000 bbl of crude oil would spill. If such an event were to occur during exploration, oil from the plume fallout and the wellhead would be deposited over snow and ice surfaces. If such an event occurred during the drilling of a development well, it still is likely that the oil would be deposited over snow and ice surfaces, because those are the prevailing conditions the majority of the year on the North Slope. However, the event could occur during spring breakup or during the summer season and deposit the oil on melting snow and ice or water and vegetation, respectively.

The area affected would be determined by the plume size, which is dictated by flow pressure and the diameter of the orifice. Typically, ≥30 percent of the oil evaporates before settling on land. For this scenario, it is projected that oil droplets settling out from the plume could cover up to several acres in downwind directions. Also, oil flowing from the drill site would spread downslope following the terrain and potentially flow into a lake or waterbody. The estimated area of impact is ≤150 acres.

For a discussion of the Fate and Behavior of Oil Spills, please refer to Section IV.A.3. Given the present technology associated with blowout prevention and effective well control, it is extremely unlikely that an uncontrolled release of crude oil could occur.

Pipeline Rupture Assumptions: A pipeline rupture is identified as the "extreme worst-case" in *The Alpine Development Project: Environmental Evaluation Document* (September 1997 Revision). For purposes of this IAP/EIS, it was assumed that a 14-in diameter pipeline with a flow rate of 48/bbl/minute ruptures with an initial discharge of 50 bbl. The 2,800 bbl of oil contained within the pipeline is assumed to be released due to the distance and gradient to the shutoff valves.

Oil flowing from the pipeline rupture would spread downslope following the terrain and potentially could flow into a lake or waterbody. While the highest probability is that the oil would be deposited on a snow and ice surface, it could be deposited on melting snow, ice, and water, or on vegetation, depending on the time of the year. The estimated area of impact is ≤150 acres.

B. EFFECTS OF A 200,000 BARREL TANKER OIL SPILL:

Assumptions: The environmental impacts of low-probability, high effects, very large tanker spill along the TAPS Tanker Route is analyzed in the Gulf of Alaska/Yakutat Planning Area Oil and Gas Lease Sale 158 (USDOI, MMS, 1995). This appendix uses that information to analyze tanker spills occurring from oil production in the Northeast NPR-A Planning Area. For estimates of the chance of one or more tanker spills occurring from oil production in the planning area, refer to Table IV.A.2-5.

The potential effects of a catastrophic spill of 200,000 bbl are analyzed on representative areas of sensitive resources in the Gulf of Alaska. A very large oil spill is a low-probability event that has the potential for very high effects on the environment. For purposes of analysis, this large oil spill is assumed to occur along the TAPS tanker route in the Gulf of Alaska. The offshore area between Dry Bay and Lituya Bay was chosen as a spill point for this analysis based on the diversity of exposed sensitive environmental resources from an oil spill in this area (Fig. B-1). The spill size was chosen based on the two largest tanker spills in

Table B-1
Hypothetical 200,000-bbl Tanker-Spill-Size Examples[1]

	200,000-bbl spill[2]					
Time After Spill in Days	1	3	10	30	45	60
Oil Remaining (%)	79	70	53	37	33	31
Oil Dispersed (%)	2	7	19	32	35	37
Oil Evaporated (%)	16	21	26	29	30	30
Thickness (mm)	5.1	2.9	1.4	0.7	0.5	0.4
Area of Thick Slick (km^2)[3]	4.7	7.3	12	17	19	21
Discontinuous Area (km^2)[4]	88.0	365.2	1,737.5	7,210.9	12,192.6	17,698.7

Source: USDOI, MMS, Alaska OCS Region, 1993.
[1] Calculated with the SAI oil-weathering model of Kirstein, Payne, and Redding (1983). These examples —for a Cook Inlet Crude type— are discussed in Section IV.A, Fate and Behavior.
[2] Summer 11.7-kn-windspeed, 9.9-°C, 1.0-m-wave height. Average Weather Marine Area C (Brower et al., 1988).
[3] This is the area of oiled surface.
[4] Calculated from Equation 6 of Table 2 in Ford (1985): the discontinuous area of a continuing spill or the area swept by an instantaneous spill of a given volume.

Table B-2
Mass Balance of Oil Through Time of a Hypothetical 200,000-bbl Oil Spill Along Tanker Segment T6

Days	1	3	10	30	45	60
Oil Evaporated[1]	30,000[2]	40,000	48,000	56,000	58,000	58,000
Oil Disbursed[1,3]	4,000	9,000	31,000	55,000	57,000	60,000
Oil Sedimented[1,3]	0	5,000	9,000	11,000	13,000	16,000
Oil Onshore[1,3]	0	17,000	30,000	40,000	45,000	55,000
Oil Remaining[1,3]	162,000	125,000	78,000	36,000	23,000	7,000

Source: MMS, Alaska OCS Region, 1993.
[1] Calculated with the SAI oil-weathering model of Kirstein, Payne, and Redding (1983).
The examples are for a Cook Inlet crude type in Summer 9.9-°C sea-surface temperature and 11.7-kn winds.
[2] Barrels.
[3] Modified to fit fate calculations of Gundlach et al. (1983) and Wolfe et al. (1993).

U.S. waters, the *Burma Agate* near Galveston (247,500 bbl) and the *Exxon Valdez* in Prince William Sound (258,000 bbl) (Anderson, 1994, pers. comm.; Wolfe et al., 1994). The selected area is affected by a 200,000-bbl hypothetical spill with characteristics identified in the following scenario.

Tanker-Spill Scenario: A hypothetical tanker spill occurs along Tanker Segment T6 with onshore winds in summer (Fig. B-1). The 70,000-dead-weight-ton tanker releases 200,000 bbl of Cook Inlet-like crude oil. Weather conditions hamper cleanup activities in the first 10 days and the oil is washed ashore, contacting the coastline within 10 days and affecting the exposed portion of the area within 30 days after its release.

Figures B-1 and B-2 graphically present the estimated conditional probabilities (expressed as percent chance) that an oil spill starting at Tanker Segment T6 in the summer season would contact individual Land Segments (LS's), Sea Segments (SS's), and Environmental Resource Areas (ERA's) within 3, 10, and 30 days, assuming that a ≥1,000-bbl spill occurs along Tanker Segment T6 (USDOI, MMS, 1995).

The hypothetical 200,000-bbl spill occurs approximately 60 km due east of the coast between Dry Bay and Lituya Bay along Tanker Segment T6. The current regime in the vicinity of this hypothetical 200,000-bbl spill is characterized by the flow of the Alaska Current and the

Table B-3
200,000-bbl Spill Dispersed-Oil Characteristics

Time after Spill in Days[1]	Oil Dispersed[1] (%)	Discontinuous Area[1] (km^2)	Assumed Dispersion Depth (m)	Dispersed-oil Concentration ($\mu g/l$)
1	2	88.0	1	6,477
3	7	365.2	2	2,731
10	19	1,737.5	7.5	416
30	32	7,210.9	15	84
45	35	12,192.6	17.5	47
60	37	17,698.7	20	30

Source: USDOI, MMS, Alaska OCS Region, 1993. [1]Table B-1.

Alaska Coastal Current. These currents move the oil spill to the north and west along the Gulf of Alaska.

Within 10 days during summer, the Oil-Spill-Risk Analysis (OSRA) estimates oil-spill contact to Kayak Island, Cape Suckling, the area adjacent to Bering Glacier and Kaliakh River (LS's 68, 69, 70 and 71), and the area from the Yahtse River to Yakutat Bay (LS's 74, 75 and 76) from a spill occurring along Tanker Segment T6 (Fig. B-2). By the end of day 30, the OSRA estimates contact to Gore Point and the Pye Islands (LS's 56 and 58) and from Elrington and Latouche Island to Cape Fairweather (LS's 61 through 80) from a spill occurring along Tanker Segment T6 (Fig. B-2).

During summer by the end of day 10, the OSRA estimates oil-spill contact to ERA's 5 through 8 from a spill occurring along Tanker Segment T6 (Fig. B-2). By the end of day 30, the OSRA estimates oil-spill contact to ERA's 5 through 15 and 18 and to SS 1 and 2 from a spill occurring along Tanker Segment T6 (Fig. B-2).

Using the oil-weathering model of Kirstein, Payne, and Redding (1983), the mass balance estimates from the *Amoco Cadiz* oil spill (Gundlach et al., 1983) and the *Exxon Valdez* oil spill (Wolfe et al., 1993), and Table B-1, a qualitative mass balance for a hypothetical oil spill of 200,000 bbl is presented in Table B-2. Approximately 30 percent of the oil is dispersed into the water column. A large component, approximately 28 percent, comes ashore. Approximately 30 percent of the oil is lost to the atmosphere due to evaporation. After 60 days, the oil (7,000 bbl) represented by the slick is no longer visible as a coherent slick and is in the form of tarballs and tar particles suspended in the water column.

As stated in the mass balance, approximately 55,000 bbl would be onshore after 60 days. The approximately 55,000 bbl of oil is estimated to landfall portions of the shores of the northern Gulf of Alaska and Prince William Sound, based on the OSRA results discussed above from a spill along Tanker Segment T6.

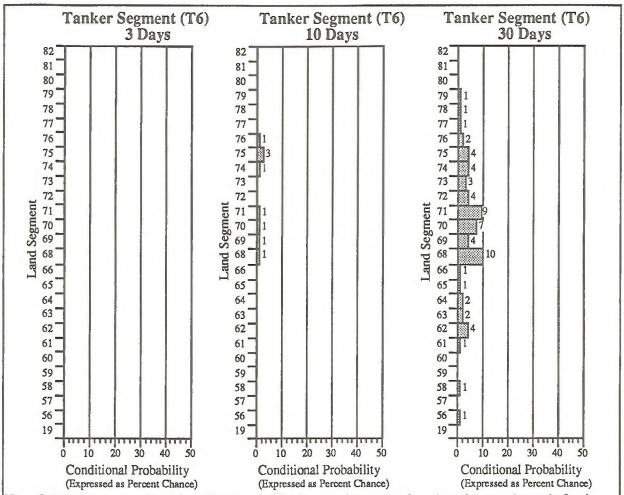
Theoretical calculations of slick size from a hypothetical spill of 200,000 bbl were investigated using the equations of Ford (1985) and Kirstein, Payne, and Redding (1983). Table B-1 shows the estimated areal extent of a continuous thick slick and a discontinuous slick through time.

1. Air Quality: Under this analysis, a 200,000-bbl-oil spill would affect onshore air quality. Emissions would result from evaporation and burning of the spilled oil.

Evaporation of spilled oil is a source of gaseous emissions. Modeling predictions of hydrocarbon evaporation (Payne et al., 1984a,b, 1987) from a 200,000-bbl slick over 30-day periods estimate that 56,000 bbl—or 7,817 tons—of hydrocarbons would evaporate. Because approximately 10 percent of gaseous hydrocarbons are nonmethane volatile organic compounds (VOC), 781.7 tons of VOC would be lost to the atmosphere. The movement of the oil slick during this time would result in lower concentrations and dispersal of emissions over an area several orders of magnitude larger than the slick itself.

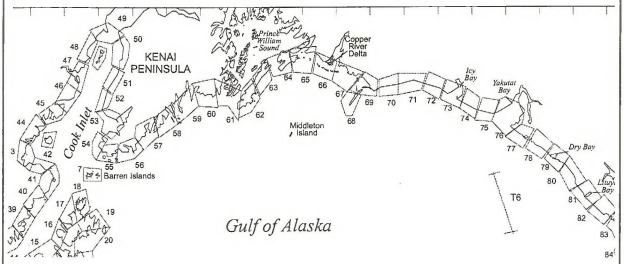
In situ burning is a preferred technique for cleanup and disposal of spilled oil in oil-spill-contingency plans. For catastrophic oil spills, in situ burning may be the only effective technique for spill control.

Burning could affect air quality in two important ways. Burning would reduce emissions of gaseous hydrocarbons



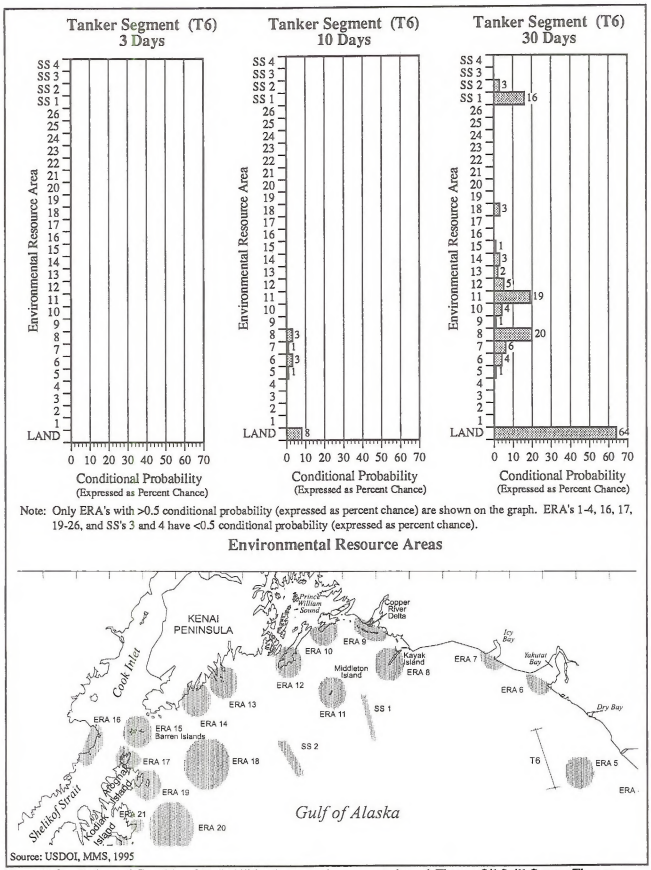
Note: Only land segments with >0.5 conditional probability (expressed as percent chance) are shown on the graph. Land Segments with all values less than 0.5 conditional probability (expresses as percent chance) are not shown.

Land Segments



Source: USDOI, MMS, 1995.

Figure B-1. Estimated Conditional Probabilities (expressed as percent chance) That an Oil Spill Greater Than or Equal to 1,000 Barrels Starting at Hypothetical Tanker Segment 6 (T6) in the Summer Season Will Contact a Certain Land Segment within 3, 10, or 30 Days



Note: Only ERA's with >0.5 conditional probability (expressed as percent chance) are shown on the graph. ERA's 1-4, 16, 17, 19-26, and SS's 3 and 4 have <0.5 conditional probability (expressed as percent chance).

Source: USDOI, MMS, 1995

Figure B-2. Estimated Conditional Probabilities (expressed as percent chance) That an Oil Spill Greater Than or Equal to 1,000 Barrels Starting at Hypothetical Tanker Segment 6 (T6) in the Summer Season Will Contact Certain Environmental Resource Areas (ERA), Sea Segments (SS), and Land within 3, 10, or 30 Days

by 99.98 percent and slightly increase emissions—relative to quantities in other oil and gas industrial operations—of other pollutants. If the oil spill were ignited immediately after spillage, the burn would combust 33 to 67 percent of the crude oil or higher amounts of fuel oil that otherwise would evaporate. On the other hand, incomplete combustion of oil would inject about 10 percent of the burned crude oil as oily soot, plus minor quantities of other pollutants, into the air. For a 200,000-bbl spill, setting fire at the source could burn up to 85 percent of the oil—with 5 percent remaining as residue or droplets in the smoke plume—in addition to the 10-percent soot injection (Evans et al., 1987). Clouds of black smoke from a 360,000-bbl oil-spill tanker fire 75 km off the coast of Africa locally deposited oily residue in a rainfall 50 to 80 km inland. Later the same day, clean rain washed away most of the residue and allayed fears of permanent damage.

Coating portions of the ecosystem in oily residue is the major, but not the only, potential air-quality risk. Recent examination of polycyclic aromatic hydrocarbons (PAH) in crude oil and smoke from burning crude oil indicate that the overall amounts of PAH change little during combustion, but the kinds of PAH compounds present do change. Benzo(a)pyrene, which is often used as an indicator of the presence of carcinogenic varieties of PAH, is present in crude-oil smoke in quantities approximately three times larger than in the unburned oil. However, the amount of PAH is very small (Evans, 1988). Investigators have found that overall, the oily residue in smoke plumes from crude oil is mutagenic but not highly so (Sheppard and Georghiou, 1981; Evans et al., 1987). The Expert Committee of the World Health Organization considers daily average smoke concentrations of more than 250 micrograms per cubic meter to be a health hazard for bronchitis.

Large fires create their own local circulating winds—toward the fire at ground level—that affect plume motion. In any event, soot produced from burning oil spills tends to slump and wash off vegetation in subsequent rains, limiting any health effects in the very short term. Accidental emissions are, therefore, expected to have a low effect on onshore air quality.

Conclusion: Concentrations of criteria pollutants would remain well below Federal air-quality standards.

2. Water Quality: Accidental oil spills would add substances that may be foreign to or increase the concentration of constituents already present in the water column of the northeastern Gulf of Alaska. In general, the added substances may cause sublethal effects in some marine organisms if concentrations are greater than the chronic criteria and lethal effects if concentrations are greater than acute criteria. This analysis considers 15 µg/l to be a chronic criterion and 1,500 µg/l—a hundredfold higher level—to be an acute criterion for total hydrocarbons.

The effects of a very large, 200,000-bbl oil spill on water quality are based on the amount of oil dispersed into the water column; the characteristics of the oil spill are noted in Tables B.1 and B.2. The concentrations are simply estimated from the amount of oil dispersed into the water column for each time interval by assuming that (1) the extent of the discontinuous area estimated for the surface extends into the water column; (2) the depth of mixing is 2 m after 3 days, 7.5 m after 10 days, and 15 m after 30 days; (3) the concentration of the dispersed oil is uniform in the "mixed" watermass; (4) other processes, except sedimentation, affecting degradation of oil or removal of oil from the water column are neglected; and (5) the weight of a barrel of oil is 314.26 pounds.

The waters of the northeastern gulf are stratified in the summer; vertical mixing in the surface layer may be limited to the upper 20 to 25 m. For depth-of-mixing estimates, it is assumed that the oil will be dispersed into the water column to a depth equivalent to the mean monthly significant wave height of 2 m. At the end of 10 days, the oil is assumed to have dispersed to a depth of 7.5 m. At the end of 30 days, the oil is assumed to have dispersed to a depth of 30 m. The depth of mixing during the first day is assumed to be 1 m. Table B.2 shows the estimates of the amount of oil remaining in the water and removed by sedimentation and evaporation for time intervals from 1 to 60 days.

For a 200,000-bbl spill, the estimated concentrations of oil dispersed into the water column are shown in Table B-3. The high concentrations of oil associated with estimating dispersal in the water column may represent an upper range of dispersed-oil concentrations reached during the first several days following a large spill; these concentrations are greater than the total hydrocarbon acute criterion of 1,500 µg/l that was used to evaluate the effects of a 29,000-bbl spill and smaller spills. Between 10 and 30 days after the spill, concentrations of dispersed oil are within the range of concentrations reported for tanker spills of 0.18 and 1.6 MMbbl of oil (NRC, 1985; Gundlach et al., 1983). The amount of dispersed oil in the water after 30 to 60 days emphasizes the time it would take before the oil is reduced to concentrations that are below the total hydrocarbon chronic criteria—15 µg/l—and eventually disappears from the water. Dilution rates associated with permitted discharges suggest that the dispersion rates of oil droplets in the water column may be greater than those estimated for this spill.

Conclusion: The water quality would be reduced from good (unpolluted) to polluted by the presence of

hydrocarbons from a large (200,000-bbl) oil spill that has a relatively low probability of occurring. Contamination (the presence of hydrocarbons in amounts >15 μg/l) would be temporary (last for about 2 months or more) and affect an area between 10,000 and 20,000 km^2.

3. Lower-Trophic-Level Organisms: The 200,000-bbl oil spill would expose some lower-trophic-level organisms to petroleum-based hydrocarbons.

The effect of petroleum-based hydrocarbons on phytoplankton, zooplankton, and benthic organisms ranges from sublethal to lethal. Where flushing times are longer and water circulation is reduced (e.g., bays, estuaries, and mudflats), adverse effects are expected to be greater; and the recovery of the affected communities is expected to take longer. Large-scale effects on plankton due to petroleum-based hydrocarbons have not been reported. Assuming that a large number of phytoplankton were contacted by an oil spill, the rapid replacement of cells from adjacent waters and their rapid regeneration time (9-12 hours) would preclude any major effect on phytoplankton communities. Observations in oiled environments show that zooplankton communities experience short-lived effects due to oil. Affected communities appear to recover rapidly from such effects because of their wide distribution, large numbers, rapid rate of regeneration, and high fecundity. Large-scale effects on marine plants and invertebrates due to petroleum-based hydrocarbons have not been reported. The sublethal effects of oil on marine plants include reduced growth and photosynthetic and reproductive activity. The sublethal effects of oil on marine invertebrates include adverse effects on reproduction, recruitment, physiology, growth, development, and behavior (feeding, mating, and habitat selection).

The 200,000-bbl spill is assumed to occur offshore (Tanker Segment T-6). It is also assumed that a portion of it (an estimated 30,000 bbl) will contact the shore within 10 days and cover a discontinuous surface area on the water of about 1,737 km^2. Hence, the 200,000-bbl spill would substantially increase the amount of oil contacting the gulf shoreline and surface waters. For this reason oil from the 200,000-bbl spill is likely to remain in the affected shoreline sediments longer.

Regarding the shoreline most likely to be contacted, the OSRA estimates that the conditional probability (expressed as percent chance) of an oil spill contacting the shore within 10 days ranges from 1 to 4 percent for 9 eastern land segments (LS's 68-76; Fig. B-1). Conditional probabilities (expressed as percent chance) west of this are <0.5 percent. The OSRA estimates that the conditional probability (expressed as percent chance) of contact within 30 days ranges from 1 to 8 percent for 27 land segments (LS's 7-76 Fig. B-1). However, the 30-day conditional probability (expressed as percent chance) of oil contacting the shore is generally lowest west of Resurrection Bay (1-3%) and highest east of Cape Saint Elias (2-8%). Hence, a majority of the oil from the 200,000-bbl spill that would be washed ashore is expected to contact shoreline areas from Cape Saint Elias east to Icy Bay. A much smaller amount of extremely weathered oil is expected to contact some shoreline areas to the west of Cape Saint Elias.

Based on the above, this analysis has assumed that the 200,000-bbl spill would contact about 40 percent more gulf shoreline, and 300 percent more surface water, with about three times as much oil. Within the sale area, all of the above differences are estimated to increase effects on marine plants and invertebrates in the intertidal area by about 40 percent, and to increase effects on plankton in open-water areas by about 300 percent. However, these increases are expected to have little effect on recovery times in the Gulf of Alaska. This is due primarily to the high rate of hydrologic exchange in open-water areas and the amount of heavy wave action in most intertidal areas.

Based on these estimates and assumptions, the 200,000-bbl oil spill is estimated to have sublethal and lethal effects on 1 to 5 percent of the phytoplankton and zooplankton populations in the sale area. Recovery is expected to take 1 or 2 days for phytoplankton and up to 1 week for zooplankton. The total percentage of plankton affected could increase to about 10 percent if many embayments were contacted by the spill. Recovery within the affected embayments is expected to take 1 to 2 weeks. Most marine plants and invertebrates in subtidal areas are not likely to be contacted by an oil spill (contact estimated at <5%). The 200,000-bbl oil spill is estimated to have lethal and sublethal effects on about 40 to 50 percent of the intertidal and shallow subtidal marine plants and invertebrates in the sale area. Recovery of these communities is expected to take 2 to 3 years in high-energy habitats and up to 7 years in lower-energy habitats.

Conclusion: The 200,000-bbl oil spill is estimated to have lethal and sublethal effects on 1 to 10 percent of the plankton in the proposed sale area. Recovery is expected to take 1 or 2 days for phytoplankton and up to 1 week for zooplankton. The spill also is estimated to have lethal and sublethal effects on about 40 to 50 percent of the intertidal and shallow subtidal marine plants and invertebrates in the sale area. Recovery of these communities is expected to take 2 to 3 years in high-energy habitats and up to 7 years in lower-energy habitats. Less than 5 percent of the subtidal benthic populations in the sale area are expected to be affected.

4. Fishes: The assumed 200,000-bbl-oil spill from a tanker accident that occurs in the southern portion of the

sale area during the summer would adversely affect pelagic, semidemersal, and demersal fish that inhabit these waters. The adverse effects, ranging from sublethal to lethal in the event of contact by oil, would not, however, reach any appreciable number of fishes. The 200,000-bbl oil spill would not reach any large ocean area with persistent toxicity (Malins, 1977). These factors, when compared with the large regional fish populations, the seasonal migratory behavior of many species, the low densities within a given habitat, and the wide distribution of the populations over this region and within the sale area, would cause only a very small percentage of a population to be contacted by the assumed 200,000-bbl spill.

Salmon smolt and fry would be at risk during summer. Salmon have economic importance and are abundant over much of Alaska. Salmon smolt and fry would be transiting the coastal area during this time. As revealed by the studies of the *Exxon Valdez* oi spill in Prince William Sound, pink salmon fry would suffer reduced growth due to the metabolic cost of depurating a spill-related hydrocarbon burden (Wertheimer et al., 1993; Carls et al., 1993), and the slower growth of juvenile pinks may have caused an incremental reduction in survival to adulthood. Small numbers of smolt from other salmon species would also be contacted. The coastal areas that are oiled, however, do not represent a large segment of the salmon-spawning habitat or migration routes; e.g., in Prince William Sound, a relatively small segment of pink salmon streams was oiled by the *Exxon Valdez* spill. In three salmon-management districts with 209 identified spawning streams, 29 (14%) actually were on oiled shorelines (Maki et al., 1993). A 200,000-bbl oil spill in offshore waters would have the potential to contact fewer of the larger number of pink salmon-spawning streams and, given the depth at which salmon fry and other salmon usually migrate, perhaps <1 percent of the migrants would be at risk from a 200,000-bbl oil spill.

Pacific herring would also be adversely affected by a 200,000-bbl oil spill because their eggs are laid within the littoral zone, and the resulting larvae and fry spend their first summer in shallow coastal waters before moving offshore in the fall. The number of herring larvae and juveniles that would be affected is indeterminate. However, given the size and distribution of herring populations in the Gulf of Alaska and the limited coastal area contacted, there probably would not be a large-scale loss of herring from a 200,000-bbl oil spill.

Some semidemersal fishes might be injured by contact with a large oil spill; but given their usual habitat in deeper waters, only the limited, low-concentration water-soluble fractions of the oil would reach these depths where it is no longer at concentrations toxic to semidemersal fishes (Kineman, 1980). During summer, some pelagic larvae and juveniles of semidemersal fishes might be at the surface but at comparatively low densities because the pelagic zone where they occur extends to 50 m in deeper waters. Larvae and juveniles are also widely distributed. For these reasons, no appreciable number of larvae or juveniles of semidemersal fishes would be adversely affected by the spill.

Demersal fishes, well offshore and at depth, are not likely to be contacted or affected by the oil spill. Those demersal species with pelagic larvae and juveniles might be affected in the immediate zone of the oil spill, but the numbers so affected would not comprise large numbers of the total populations. This is because densities per square meter of seawater do not range above units of tens, while egg complements of most demersal species range in the thousands (Bakkala, 1975).

Laevastu et al. (1986) assessed the potential effects of a 240,000-oil spill on eastern Bering Sea fishes. They estimated that <0.3 percent of yellowfin sole eggs and larvae would be killed (yellowfin sole were used as an indicator species for all demersal and semidemersal fishes in the study). Laevastu et al. also estimated that a *maximum* 13-percent mortality of outmigrating smolt could occur and that this could translate into a 5-percent loss in returning adults. Because these estimated losses are significantly lower than measurement errors (20-90%) associated with assessing changes in stock size, the authors concluded that a "...tanker accident would have no quantifiable effect on the offshore fishery resources in the eastern Bering Sea." While the eastern Bering Sea and the Gulf of Alaska are physiographically different, they support similar biotic (fish) communities that would be affected by spilled oil in similar fashions. While Laevastu's results are not directly transferable to the Gulf of Alaska, they provide a conservative estimate of the level of effects that can be expected.

Conclusion: The effects on fishes from a 200,000-bbl oil spill are not expected to cause population-level changes. The assumed 200,000-bbl oil spill is estimated to affect <0.3 percent of the offshore marine fisheries resources and <5 percent of the adult salmon resources in the area. However, these conservatively estimated losses would not be detectable using standard fisheries-population-assessment methods.

5. Marine and Coastal Birds: The assumed 200,000-bbl tanker spill would occur offshore Cape Fairweather along Tanker Segment T6 during the summer with onshore winds (Fig. B1). Within 10 days the spill is estimated to have swept over a discontinuous area of 1,737.5 km^2; after 60 days the area of continuous slick is estimated to be 21 km^2 (Table B-1). A portion of the spill is expected to contact marine and coastal bird habitats used

especially during winter- and spring-migration periods (murrelets and terns in summer) within Yakutat and Icy Bays and near Kayak Island (ERA's 6, 7 and 8), as well as in the Fairweather Ground and Middleton Island areas (ERA's 5 and 11), as shown in Figure B-2.

Oil-spill mortality in winter and early spring in coastal areas adjacent to the spill area is likely to involve overwintering loons and grebes, cormorants, sea ducks, marbled and Kittlitz's murrelets, pigeon guillemots, gulls, and bald eagles. Based on proportional estimates from EVOS data (Ford et al., 1991; Piatt et al., 1990) and season of occurrence, and assuming equal contact in all habitats, the following approximate carcass recoveries would be expected from a spill in winter/early spring: 337 loons, 382 grebes, 674 cormorants, 1,190 sea ducks, 494 murrelets, 494 guillemots, 539 gulls, and 25 bald eagles. For any of these estimates, actual mortality may be three- to tenfold greater because of failure to recover most carcasses. Effects are expected to be most severe in species such as the yellow-billed loon, pelagic cormorant, harlequin duck, Kittlitz's murrelet, and bald eagle, where even modest losses represent a large proportion of the local—or in some cases Alaskan—populations. Greater mortality in species such as the marbled murrelet and pigeon guillemot, while locally serious in terms of loss to slowly reproducing species, is not expected to represent as severe a loss because of their substantial Alaska populations. Recovery periods for this level of mortality are expected to range from two to five generations.

Mortality in late spring is expected to include larger numbers of migrant waterfowl and shorebirds. Northwest of the spill area the Copper River Delta in particular, while not as likely to be contacted, could suffer catastrophic losses to several populations (potentially 10,000-50,000 individuals of western sandpiper, dunlin, dusky Canada goose) during the spring-migration period, requiring several generations (more for the goose) for recovery. Offshore seabird densities in spring average about 88 birds/km^2, with the potential for tens of thousands of fatalities if the spill swept an area of several hundred square kilometers or more. Recovery from such losses is expected to require at least two to three generations.

After departure of overwintering and southern-latitude migrants, spill mortality in summer is expected to include cormorants, arctic and Aleutian terns, murrelets, guillemot, puffins, and bald eagle in these coastal areas; recovery periods are not likely to change significantly, but substantial mortality at the large Aleutian tern colony near Yakutat would be expected and could represent a serious loss for this species with its relatively small population. Offshore, a spill occurring and contacting primarily the Middleton Island area in summer is expected to cause substantial murre mortality as well as losses of kittiwakes and rhinoceros auklets (potentially 10,000 or more individuals [Gould, Forsell, and Lensink, 1982]). Recovery is expected to require two or more generations. A spill moving into offshore areas could contact many tens of thousands of southern-hemisphere shearwaters present in large flocks during summer, but recovery of this abundant seabird probably would occur rapidly.

Summer density of the marbled murrelet in the immediate vicinity of Yakutat Bay ranges from 0.65 to 1.36 birds/km^2, declining to <0.31/km^2 beyond 50 km offshore and most of the area northwest of the bay. The potential spill associated with TAPS traffic is expected to cover a discontinuous area of 7,211 km^2 after 30 days (Table B-1), suggesting that murrelet mortality could total up to many hundreds of individuals. Supporting estimates of potential mortality of this magnitude, murrelets retrieved following the *Exxon Valdez* oil spill totaled about 780 (includes natural mortality), probably representing 10 to 30 percent of the total murrelet deaths during this period (Piatt et al., 1990); potential mortality values must be decreased somewhat because the size of this potential spill is 77 percent of the *Exxon Valdez* spill. Although murrelets have a low productivity, the large size of the eastern gulf population suggests that such mortality would be recovered within a few generations. Offshore average seabird densities in summer are somewhat less than in spring (69 birds/km^2), but mortality would not be expected to be less because of the loss of some eggs and/or young through contact with oiled adults.

Conclusion: The effect of exposure of marine and coastal birds to a 200,000-bbl oil spill in this region is expected to seasonally affect the yellow-billed loon, pelagic cormorant, harlequin duck, Aleutian tern, Kittlitz's murrelet, and bald eagle most severely, causing mortality of many hundreds of these marine birds and tens of eagles, requiring two to five generations for recovery. A spill approaching Middleton Island could contact 10,000 or more murres, kittiwakes, and auklets, requiring two or more generations for recovery.

6. Nonendangered Marine Mammals (Pinnipeds, Cetaceans, and Sea Otters): This analysis assumes that a 200,000-bbl tanker spill occurs offshore Cape Fairweather along Tanker Segment T6 during the summer with onshore winds (Fig. B-1). Within 10 days the spill is estimated to have swept over a discontinuous area of 1,737.5 km (Table B-1); and a portion of the spill is estimated to have contacted sea otter, harbor seal, and nonendangered cetacean habitats within Yakutat and Icy Bays (ERA's 6 and 7, respectively); sea otter and harbor seal habitats near Kayak Island (ERA 8); and northern fur seal habitat in the Fairweather Ground (ERA 5), as shown in Figure B-2. Sea otters within Yakutat Bay and near Kayak Island are expected to be

exposed to the spill and to suffer substantial losses (perhaps several hundred animals) to the local populations, with recovery taking more than one generation (perhaps ≥5 years).

Assemblages of harbor seals in Yakutat and Icy Bays and near Kayak Island are expected to be exposed to the spill and a number (perhaps several hundred or more) of them are likely to become oiled and absorb petroleum hydrocarbons through their skin and suffer physiological/toxic stress that might lead to the death of a number of oiled seals (perhaps 100-200 animals), with recovery from this loss taking place within less than one generation (probably 2 years). Groups of northern fur seals (perhaps a few hundred to a few thousand) migrating through the northern gulf in the Fairweather Ground are likely to be exposed to the spill in this offshore habitat. Several hundred to a few thousand fur seals are likely to become oiled and to suffer hypothermia due to oiling of their fur, and many or most of the oiled fur seals are assumed to be killed by this exposure to the spill. Recovery of the Pribilof Islands northern fur seal population (>800,000 seals) is expected to take place within 1 year through population recruitment.

Within 30 days after the spill, more of the spill is expected to contact Kayak Island habitats of sea otters and harbor seals as well as Yakutat and Icy Bays. The spill is estimated to contact sea otter and harbor seal habitats near Montague and Hinchinbrook Islands (ERA's 12 and 10, respectively) and along the lower Kenai Peninsula (ERA's 13 and 14), and to contact northern fur seal and cetacean offshore habitats southwest of Kayak Island (SS 1) westward to Portlock Bank (SS 2 and ERA 18), as shown in Figure B-2. Rafts of sea otters and assemblages of harbor seals along the gulf coast side of Montague and Hinchinbrook Islands and along the lower Kenai Peninsula are likely to be exposed to part of the 200,000-bbl spill and to suffer some losses (such as several hundred sea otters and perhaps ≤100 harbor seals). At 30 days the spilled oil is expected to be very dispersed and at least partly weathered, with much of the toxic components lost; thus, the losses of harbor seals and perhaps sea otters to oil contact at this stage of the spill are expected to be less than losses during the first 10 days of the spill.

Groups of northern furs seals migrating and feeding in offshore habitats southwest of Kayak Island and in Portlock Bank are likely to have some exposure to the spill within days. This exposure is expected to result in the oiling of some fur seals (perhaps a few hundred to a few thousand animals) and the assumed loss of most if not all of these fur seals due to hypothermia from the oiling and reduced thermal insulation.

Cetaceans within Yakutat Bay, such as harbor seal, Dall's porpoise, and killer and gray whales migrating along the coast between Yakutat Bay and Kayak Island at the time the spill contacts these habitats, might encounter oil on the surface of the water when breathing and resting. These encounters are not expected to result in mortalities unless the cetaceans encounter a very large, continuous oil slick of fresh, highly toxic oil from the spill and consequently inhale lethal amounts of toxic fumes, which results in the death of highly exposed whales or porpoises. The number of cetaceans lost to such possible encounters is expected to be few (probably <10 animals). If such losses occurred in a family group of killer whales, recovery could take more than one generation (such as ≥10 years). However, populations of killer whales, porpoises, and other cetaceans in the gulf are likely to replace the loss of 10 to 20 individuals within 1 year.

Cetaceans that might encounter oil from the spill within offshore habitats, such as Fairweather Ground or Portlock Bank, are not expected to suffer any lethal exposure to the spill because the oil is expected to be highly dispersed in these offshore habitats and quite weathered when encountered in the Portlock Bank area.

Conclusion: The potential total loss of sea otters to the 200,000-bbl oil spill (perhaps 1,500-2,000 individuals) is likely to take more than one generation (probably >5 years) for total recovery to take place, while the potential loss of harbor seals (perhaps about 200 individuals) is likely to take less than one generation (perhaps 2 years) for recovery to take place, depending on the population status at the time of the loss and other unrelated factors adversely affecting the regional population. Potential loss of northern fur seals to the spill (perhaps 2,000-3,000 individuals) is expected to take less than one generation (probably 1 year) for recovery to take place. The potential loss of cetaceans (10-20 individuals in a population or group) is likely to affect a family group (such as a killer whale pod) for more than one generation; but such a loss to a population of whales or porpoises is expected to take about 1 year for the population to recover.

7. Endangered and Threatened Species: For the very large oil-spill case it is assumed that one 200,000-bbl-tanker spill occurs offshore approximately 60 km due east of the coast between Dry Bay and Lituya Bay along Tanker Segment T6 in the summer. The OSRA model estimates a 19- and a 20-percent chance of a spill ≥1,000 bbl contacting ERA 11 (Middleton Island) and ERA 8 (Kayak Island), respectively, and a 16-percent chance of that spill contacting SS 1 within 30 days during the summer—assuming that a spill occurs at Tanker Segment T6. The estimated chance of the spill contacting other ERA's ranges from ≤0.5 to 6 percent within 30 days during the summer (Fig. B-2).

a. Whales: Exposure of endangered whales to spilled oil is not expected to occur. Only small numbers of endangered whales are expected to be present in the sale area or in areas contacted by the assumed oil spill. There is a slightly higher potential that humpback whales would be exposed to spilled oil, since humpback whales may be present in the Kayak and Middleton Island area. No effects on the humpback whale population from the EVOS were documented (Dahlheim and Loughlin, 1990). Few fin, sei, blue, right, or sperm whales are expected to be exposed to spilled oil. The estimated conditional probability (expressed as percent chance) of spilled oil contacting SS 1 (16%) is relatively low. For whales that may be in the vicinity of Kayak or Middleton Islands, the chances of contact are slightly higher (19-20%). A few whales may be exposed to spilled oil, resulting in temporary sublethal effects; but no mortalities are expected. The overall effects of exposure of endangered whales to a very large oil spill are expected to be negligible.

b. Steller Sea Lions: The very large oil spill discussed in this analysis could contact Steller sea lion haulouts on Kayak and Middleton Islands, but is not likely to contact any major rookeries. There are no major rookeries in the sale area, and the estimated chance of spilled oil contacting a major rookery adjacent to the sale area is low (≤0.5-5%). The highest estimated probabilities (expressed as percent chance) for ERA's are a 20-percent chance of spilled oil contacting ERA 8 (Kayak Island) and ERA 11 (Middleton Island) within 30 days in the summer. If such a spill occurred, several hundred or more adult and subadult sea lions could be exposed to spilled oil and could experience various degrees of oiling. No changes in distribution, abundance, mortality, pup production, or other potential effects have been attributed to the EVOS (Calkins and Becker, 1990), although the population's continuing decline may have masked some effects. These data suggest relatively low effects of an oil spill on sea lions. Heavily oiled individuals may experience elevated stress that could intensify any other debilitating problems, potentially causing death. Mortalities are expected to be more than 100 individuals, requiring two generations or more for recovery. Even if the spill stays at sea, oil is expected to contact some adults in pelagic waters, resulting in sublethal effects. Overall, Steller sea lions exposed to a very large oil spill would most likely experience temporary, sublethal effects; but exposure could result in lethal effects on some animals. More than 100 mortalities are expected, requiring two generations or more for recovery.

c. Short-Tailed Albatross: Only a small percentage of the short-tailed albatross population would be likely to occur in or near the Sale 158 area. Due to the expected rare occurrence of this species in the area and the relatively low probability of spilled oil contacting their habitat, it is expected that exposure to spilled oil would not occur. The effects of a large oil spill are expected to be negligible.

Conclusion: The overall effects on endangered whales, and the short-tailed albatross from exposure to a very large oil spill are expected to be negligible. Some whales could experience temporary, sublethal effects, but no mortalities are expected. Steller sea lions exposed to a large oil spill would most likely experience temporary, sublethal effects, but exposure could result in lethal effects on some animals. More than 100 mortalities could occur, requiring more than two generations for recovery.

8. Terrestrial Mammals: This analysis assumes that a 200,000-bbl tanker oil spill occurs offshore Cape Fairweather along Tanker Segment T6 during the summer with onshore winds (Fig. B-1). Within 10 days the spill is estimated to have swept over a discontinuous area of 1,738 km^2 (Table B-1), and a portion of the spill is estimated to have contacted coastline habitats of terrestrial mammals from Yakutat Bay westward to Kayak Island (LS's 68-71 and 74-76), as shown in Figure B-1. River otters and brown and black bears frequenting the shoreline of Yakutat Bay westward to Point Manby/Cape Sitkagi to near Icy Bay, and frequenting shoreline habitats from Cape Yakataga/Cape Suckling to Kayak Island, are expected to encounter oil from the spill along the beach and in intertidal habitats. Some river otters (perhaps >50) are likely to be oiled by the spill or to ingest oil through consumption of oiled prey and oiled carrion. A number of river otters (perhaps >50) are likely to be killed by the spill, with total recovery of the local population and intertidal habitats taking >1 year (perhaps ≥3 years).

Brown and black bears that frequent the above oiled shoreline habitats are likely to ingest oiled prey and oiled carrion, with perhaps 20 to 30 bears affected. Assuming that all the bears that ingest oiled food items are killed, total recovery of brown and black bear populations and local habitats is expected to take >1 year (perhaps >3 years). Although moose that occur along the shoreline of oiled shoreline habitats (Yakutat Bay/Kayak Island) may encounter oil on the beaches and mudflats while foraging on willow and other browse, they are not likely to ingest oiled intertidal vegetation during this time of the year and thus are not expected to ingest oil-contaminated vegetation and suffer mortalities or other adverse effects.

Within 30 days the 200,000-bbl oil spill is estimated to contact terrestrial mammal coastal habitats from Cape Fairweather westward to Montague Island and coastline areas on the lower Kenai Peninsula (LS's 56, 58, and 80-61, respectively), as shown in Figure B-1. More oil from the spill is expected to contact river otter and brown and black bear coastal habitats from Yakutat Bay to Kayak Island, and the spill is estimated to oil other habitats along

the coast of the Copper River Delta, on Hinchinbrook and Montague Islands, and along the southern coast of the Kenai Peninsula. Some additional river otters (perhaps 100-200 individuals) and black and brown bears (perhaps 50-100 individuals) are likely to come in contact with oil on the beaches and intertidal mudflats and to ingest oiled prey or carrion. However, by 30 days the beached oil is expected to be quite weathered and far less toxic than the oil that reaches the coast within 10 days; thus, fewer bears and river otters (perhaps 30-40 bears and <50 otters) are expected to suffer lethal doses of oil from ingestion of contaminated food sources. These additional losses of river otters and bears and contamination of habitats are likely to recover within less than one generation (or within about 1-2 years).

Although the coastal habitats of Sitka black-tailed deer on Montague and Hinchinbrook Islands are expected to be oiled by the 200,000-bbl oil spill, black-tailed deer are not likely to be directly exposed to the oil because they generally do not forage on kelp and other intertidal vegetation during the summer season, when the spill is assumed to occur. Thus, Sitka black-tailed deer are not expected to suffer mortalities from the spill.

Conclusion: The potential loss of river otters (perhaps 50-100 individuals) and contamination of intertidal habitats from the 200,000-bbl oil spill is estimated to take more than 1 year to recover (probably ≥3 years), while the potential loss of brown and black bears (perhaps 50-70 individuals) is estimated to take more than 1 year (perhaps >3 years). Neither moose nor Sitka black-tailed deer are likely to suffer mortalities or other effects from the 200,000-bbl oil spill, assuming that it occurs during the summer.

9. Economy of the Yakutat Borough: The most relevant historical experience of a tanker spill in Alaskan waters is the EVOS of 1989, which spilled 258,000 bbl. This spill generated enormous employment that rose to the level of 10,000 workers directly doing cleanup work in relatively remote locations. Smaller numbers of cleanup workers returned in the warmer months each year following 1989 until 1992. Numerous local residents quit their jobs to work on the cleanup at often significantly higher wages, which generated a sudden and significant inflation in the local economy (Cohen, 1993). Anecdotal information indicates that housing rents in Valdez in 1989 increased from 25 percent in some cases to sixfold in others, and inflated rents continued into 1990. Prices of food and other goods increased only slightly, because people could drive to Anchorage to purchase them (Henning, 1993, pers. comm.). Research shows that no data on inflation were gathered in a systematic way during the *Exxon Valdez* oil spill, although most observers agree that there was temporary inflation.

The number of cleanup workers actually used for a very large oil spill of 200,000 bbl would depend to a great extent on what procedures are called for in the oil-spill-contingency plan, how well prepared with equipment and training the entities responsible for cleanup were, how efficiently the cleanup was executed, and how well the coordination of cleanup was executed among numerous responsible entities. A very large oil spill of 200,000 bbl resulting from activity associated with Sale 158 could generate about the same number of workers associated with the *Exxon Valdez* spill—or 10,000 cleanup workers at the peak of the cleanup effort. Housing for cleanup workers would likely be located outside of Yakutat in some type of temporary enclave, such as those developed during the *Exxon Valdez* spill. Based on experience from the *Exxon Valdez* oil spill, all communities proximate to the oil-spill-cleanup effort could experience temporary increases in wage rates and a shortage of housing, which could cause significant housing-rent increases.

Conclusion: A very large spill of 200,000 bbl would create effects similar to those experienced with the *Exxon Valdez* spill. Short-term employment could reach or exceed 10,000 people, along with price inflation above 25 percent during the first 6 months of the cleanup operation. Long-term economic effects would be minimal.

10. Commercial Fisheries: The 200,000-bbl oil spill would affect the Gulf of Alaska commercial-fishing industry by exposing it to petroleum-based hydrocarbons. The 200,000-bbl spill would substantially increase the amount of oil contacting shoreline and open-water commercial fishing grounds. Because more shoreline would be contacted with more oil, oil from the 200,000-bbl spill likely would remain for a longer period in shoreline sediments. Within the Gulf of Alaska area this is not expected to result in additional closures because any large spill is large enough by itself to close northeastern gulf commercial fisheries. However, once the spill was northwest of the TAPS tanker route (the predominate direction of ocean currents), there would be substantially more oil moving out of the area from the 200,000- bbl spill. Hence, the oil from the 200,000-bbl spill is likely to enter and more strongly affect the commercial fishing grounds within portions of Prince William Sound and farther west toward Resurrection Bay. Due to the greater presence of oil in these areas, more fishery closures are expected with a 200,000-bbl spill that moves outside of the TAPS tanker route.

The estimated economic effect of a 200,000-bbl oil spill on the gulf commercial-fishing industry is based on what occurred during the larger (258,000 bbl) *Exxon Valdez* oil spill and a smaller (4,000-bbl) spill, and depends primarily on the highly variable *Exxon Valdez* spill cost estimates (ranging from $9-43 million/year for 2 years). The value of

the gulf commercial fishery (Prince William Sound to Cape Fairweather) is estimated at $75 to $200 million per year, depending on the price per year and numbers caught. Hence, in any 2-year period when the value of the northeastern gulf commercial fishery is estimated to be about $75 million per year, a 2-year loss of about $9 million per year represents a 12-percent-per-year loss for 2 years. A 2-year loss of about $43 million per year represents a 57-percent-per-year loss for 2 years. In a 2-year period when the annual value of the northeastern gulf commercial fishery is estimated to be closer to $200 million, a 2-year loss of about $9 million per year represents a 5-percent-per-year loss for 2 years, whereas a 2-year loss of $43 million per year represents a 22-percent-per-year loss for 2 years.

Because the occurrence of a large oil spill (e.g., 200,000 bbl) would preclude any knowledge of what the commercial fishery would have been worth (due to closures), the value of the commercial fishery at the time of the 200,000-bbl oil spill is assumed to be the estimated average annual value of the gulf commercial fishery. In terms of the estimated average annual value (about $125 million), a 2-year loss of about $9 million per year represents a 7-percent-per-year loss for 2 years, whereas a 2-year loss of about $43 million per year represents a 34-percent-per-year loss for 2 years. These estimates are the same as for large spill because, as indicated above, any large oil spill is large enough to close the same amount of commercial fishery within the sale area. However, if it is assumed that the oil from the 200,000-bbl oil spill also moves outside and northwest of the sale area, additional closures are expected from Prince William Sound to Resurrection Bay. It is estimated that these additional closures would further reduce the value of gulf commercial fisheries (excluding Kodiak and Cook Inlet) by about 30 percent for 2 years. Hence, estimated gulf commercial fishing losses due to the 200,000-bbl oil spill are estimated to range between $45 million (7+30 = 37%) and $80 million (34+30 = 64%) per year for 2 years following the spill.

Thus, based on loss estimates from the *Exxon Valdez* spill and the estimated annual value of the northeastern gulf commercial fishery, the 200,000-bbl oil spill could result in an economic loss to the northeastern gulf commercial fishing industry of 12 to 57 percent per year for 2 years (within the sale area). However, in terms of the estimated average annual value of the northeastern gulf commercial fishery, the 200,000-bbl oil spill is more likely to result in a loss of about 7 to 34 percent per year for 2 years within the sale area. Additional closures northwest of the sale area are estimated to increase this loss to between 37 and 64 percent per year for 2 years following the spill. Compensation to the commercial-fishing industry for participating in the cleanup of an oil spill is likely to exceed these economic losses by several orders of magnitude.

Conclusion: Based on the assumptions discussed in the text, adjusted *Exxon Valdez* spill loss estimates, and the average annual value of the Gulf of Alaska commercial fishery, the 200,000-bbl oil spill is estimated to result in economic losses to the gulf commercial-fishing industry ranging from 37 to 64 percent per year for 2 years following the spill.

11. Subsistence-Harvest Patterns: This analysis assumes that a 200,000-bbl tanker oil spill occurs offshore Cape Fairweather along Tanker Segment T6 during the summer with onshore winds (Fig. B-1). Within 10 days the spill is estimated to have swept over a discontinuous area of 1,738 km (Table B-1), and a portion of the spill is estimated to have contacted coastline habitats from Yakutat Bay westward to Kayak Island, as shown in Figure B-1. Within 30 days the 200,000-bbl oil spill is estimated to contact the entire coastline associated with the Yakutat and Cordova subsistence-harvest areas.

The effects on subsistence-harvest patterns would be comparable to the effects from the *Exxon Valdez* oil spill of 1989, because both tanker spills would have occurred at similar times and would be of approximately the same size. The primary difference between the two incidents is in the geography of the spills, which makes Yakutat more instantaneously subject to contact. The annual round of harvest activities for Yakutat indicates that some harvests, such as for harbor seal, salmon, and marine invertebrates, could have begun. The instantaneous nature of the event would not permit opportunistic "stocking up" of available resources. Using experience from the *Exxon Valdez* spill as a gauge, effects on subsistence-harvest patterns for the residents of Yakutat and Cordova—especially for intertidal resources and some fish species—would be expected to last for at least 4 years.

Conclusion: Subsistence harvests in the 200,000-bbl-spill case would be reduced or substantially altered by as much as 80 percent in Yakutat and Cordova for at least 1 year and, to a lesser extent, for selected subsistence resources 3 to 4 years beyond.

12. Sociocultural Systems: This analysis assumes that a 200,000-bbl tanker oil spill occurs offshore Cape Fairweather along Tanker Segment T6 during the summer with onshore winds (Fig. B-1). Within 10 days the spill is estimated to have swept over a discontinuous area of 1,738 km (Table B-1), and a portion of the spill is estimated to have contacted coastline habitats from Yakutat Bay westward to Kayak Island, as shown in Figure B-1. Within 30 days the 200,000-bbl oil spill is estimated to contact the

entire coastline associated with the Yakutat and Cordova subsistence-harvest areas.

The location of the 200,000-bbl spill off Cape Fairweather suggests that spill effects on Yakutat would be instantaneous, with little time to prepare, and could be expected to last at least 4 years. Individuals and communities that depend on income from commercial fisheries would experience stress and anxiety from debt burden, income shortfalls, litigation, and fear for the future should the fisheries they participate in or depend on in other capacities be shortened or terminated due to the accidental spill.

Considerable stress and anxiety also would be expected over the loss of subsistence resources, contamination of habitat, fear of the health effects of eating contaminated wild foods, and the need to depend on the knowledge of others about environmental contamination (Maganak, 1990; Fall, 1992; McMullen, 1993). Individuals and the communities of Yakutat and Cordova would be increasingly stressed during the time needed to modify subsistence-harvest patterns by selectively changing harvest areas, if available. Associated culturally significant activities, such as the organization of subsistence activities among kinship and friendship groups and the relationships among those that customarily process and share subsistence harvests, would be modified or would decline as well.

The 200,000-bbl-spill case also would be expected to affect individuals and institutions in ways similar to the experience from the *Exxon Valdez* spill. As shown by that spill, some individuals found a new arena for pre-existing personal and political conflict, especially over the dispensation of money and contracts. In the smaller communities, cleanup work produced a redistribution of resources, creating new schisms in the community (Richards, undated). Many members of small communities were on the road to sobriety prior to the spill; but after the spill some people began drinking again, producing the re-emergence of numerous alcohol-related problems, such as child abuse, domestic violence, and accidents, that were there before (Richards, undated).

Institutional effects included additional burdens being placed on local government, disruption of existing community plans and programs, strain on local officials, difficulties dealing with the spiller, community conflict, disruptions of customary habits and patterns of behavior, emotional effects and stress-related disorders, confronting environmental degradation and death, and violation of community values (Endter-Wada, 1992). Postspill stress resulted from this seeming loss of control over individual and institutional environments as well as from secondary episodes such as litigation, which produced secrecy over information, uncertainty over outcomes, and community segmentation (Smythe, 1990; Picou and Gill, 1993). Attempts to mitigate effects met with a higher priority placed on concerns over litigation and a reluctance to intervene with people for fear it might benefit adversaries in legal battles (Richards, undated).

Conclusion: Sociocultural systems in the communities of Yakutat and Cordova are expected to undergo severe individual, social, and institutional stress and disruption in the year of the 200,000-bbl spill that would last at least 4 years thereafter.

13. Archaeological Resources: The 200,000-bbl oil spill would affect archaeological resources by creating surface-disturbing activities resulting from emergency shoreline treatment. Following the *Exxon Valdez* oil spill, Exxon developed and funded a Cultural Resource Program to ensure that potential effects on archaeological sites were minimized during shoreline treatment (Betts, 1991). This program involved a team of archaeologists who performed reconnaissance surveys of the affected beach segments, reviewed proposed oil-spill treatment, and monitored treatment. As a result of the coastline surveys, hundreds of archaeological sites were discovered, recorded, and verified. This resulted in the most comprehensive archaeological record of Alaskan coastline ever documented.

Although a number of sites in the *Exxon Valdez* spill area were vandalized during the 1989 cleanup season, the large number of Exxon and government-agency archaeologists visible in the field may have lessened the amount of site vandalism that may have occurred (Mobley, 1990).

The Dekin study (1993) found that small amounts of petroleum hydrocarbons may occur in most archaeological sites within the study area. This suggests a low-level petroleum contamination that had not previously been suspected. Since the researchers found no evidence of extensive soil contamination from a single definable source (i.e., the oil spilled from the *Exxon Valdez*), they "...now add the continuing contamination of soils from small and large petroleum spills in areas where present and past land use coincide" (Dekin, 1993). Vandalism was found to have a significant effect on archaeological site integrity but could not be tied directly to the oil spill (Dekin, 1993).

Conclusion: The expected effect on onshore archaeological resources from a large oil spill is uncertain, but data from the *Exxon Valdez* oil spill indicate that <3 percent of the resources within a spill area would be significantly affected.

14. Recreation and Tourism: This analysis assumes that a 200,000-bbl tanker spill occurs approximately 60 km due east of Glacier Bay National Park

and Preserve between Dry Bay and Lituya Bay during the summer. Within 10 days the spill is estimated to contact the coastal areas of Wrangell-Saint Elias National Park and Preserve and the Tongass National Forest adjacent to Yakutat Bay. Within 30 days the oil spill would move north and west along the Gulf of Alaska in the Alaska Current and Alaska Coastal Current and contact coastal areas in Prince William Sound and the Kenai Fjords National Park. The spill also would contact Glacier Bay National Park and Preserve within 30 days.

Recreation and tourism activities in coastal areas contacted by the spill would in all likelihood be precluded until spill-cleanup operations and natural processes restored the sites to a relatively natural condition. Oil-spill-cleanup activity would disturb resources in the area 200 m inward from the waterline, as happened with the *Exxon Valdez* oil spill oil-spill cleanup.

The effect of a large spill on Prince William Sound's tourist industry would be very similar to that of the *Exxon Valdez* spill. The immediate effect of a large oil spill contacting the northern coast of the Gulf of Alaska would be the cancellation of tourist plans to visit the area contacted by the spill. The biggest effect would be felt by small charter-boat, lodge, and sport-fishing operations that normally would get many of their bookings just before the summer season. Lodges and fishing operations in the Yakutat area would probably suffer the largest economic losses as a result of the spill. Other tourist attractions along the Gulf of Alaska and areas adjacent to the area of spill contact could expect a decline in the number of bookings for the summer. Major cruise lines, which require deposits from customers, would probably be least affected by the oil spill. Major economic losses could be expected for the tourist season following the spill; however, tourist levels would be expected to rebound to prespill levels 1 year after the spill, as was the experience with the *Exxon Valdez* spill.

Conclusion: The 200,000-bbl oil spill would preclude recreation and tourism activities in the coastal areas of the Wrangell-Saint Elias National Park and Preserve, Tongass National Forest, Prince William Sound, and Glacier Bay National Park and Preserve until spill-cleanup operations and natural processes restored the sites. Major economic losses could be expected for the tourist industry following the spill, with small charter-boat, lodge, and sportfishing operations in the Yakutat area being the hardest hit. However, tourist levels would be expected to rebound to prespill levels 1 year after the spill.

15. Land Use Plans and Coastal Management Programs: In the event of a 200,000-bbl oil spill, greater effects would be experienced by most biological resources in coastal environments and intertidal areas; by subsistence users; and by cultural and archaeological resources. Water quality would exceed the acute chronic criterion for >1 month. Because these greater levels of effects are perpetrated by an accidental oil spill along a transportation route that is not inherently more dangerous than other potential routes, most Statewide and district policies would apply here.

Statewide standards and district policies related to coastal development; geophysical hazards; energy facilities; transportation and utilities; and historic, prehistoric, and archaeological resources can be applied better when an actual development is proposed. Nothing in the scenario is inherently in conflict with these policies. The broader Statewide standards and district policies related to subsistence; habitat; and air, land, and water quality can be applied more easily with the information available at the lease-sale stage.

The greater level of effects identified in above Sections II.a through II.n do not translate into greater potential for conflict with these Statewide standards and district policies for the reason stated above—the spill that is the source of the effects is accidental and does not reflect a particular siting decision for transporting oil to market.

Regardless of the method used for transshipment, all oil leaving the State of Alaska travels by tanker. Mitigating measures that reinforce MMS regulations related to oil-spill-contingency (OSCP's) plans and regulations that ensure safe drilling operations ameliorate potential conflict on the drilling site; but in this instance the spill occurs while the product is being transported to market. Tanker traffic is not controlled by MMS; however, OSCP's are required for tankers and would need to be in place before the oil was transported.

Conclusion: Conflicts with the Statewide standards and Yakutat District policies related to site-specific decisions are not inherently in conflict with the scenario. Effects of a 200,000-bbl spill could affect the habitat; subsistence; and air-, land-, and water-quality standards of the ACMP and the Yakutat District plan.

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APPENDIX C

Endangered and Threatened Species Consultation

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ALASKA STATE OFFICE
222 W. 7th Avenue, #13
ANCHORAGE, ALASKA 99513-7599

6840 NPRA (931)

MAY 6 1997

Memorandum

To: Regional Director, U.S. Fish and Wildlife Service

From: State Director

Subject: Endangered Species - Proposed Oil and Gas Lease Sale in the National Petroleum Reserve-Alaska (NPR-A)

The Bureau of Land Management (BLM) has initiated an Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) to update its management strategy for the northeast portion of NPR-A (see attached Notice of Intent, which includes a map of the area). The IAP/EIS will address the full range of BLM's management responsibilities in the planning area, including oil and gas leasing, wildlife protection, subsistence, and recreation. The plan will be finalized in the summer of 1998 and a Record of Decision is anticipated at the end of July, 1998. If oil and gas leasing results from the IAP/EIS, the lease sale will probably take place no sooner than September, 1998.

In accordance with the Endangered Species Act, Section 7, regulations governing interagency cooperation, we are providing a notification of the listed and proposed species and critical habitat that will be included in the biological evaluation.

It is our understanding that there are no designated or proposed critical habitats for any listed or proposed species potentially affected by oil and gas exploration activities in the proposed lease sale area. In our biological evaluation, we will review the following listed and proposed species that may be present in the proposed lease area.

Common Name	Scientific Name	Status
Spectacled eider	*Somateria fischeri*	threatened
Steller's eider	*Polysticta stelleri*	proposed threatened

We do not plan to include the Arctic peregrine falcon, *Falco peregrinus tundrius*, in the biological evaluation since it was delisted on October 5, 1994, unless we are otherwise advised by your agency.

In the event that the IAP/EIS results in an oil and gas lease sale, analysis of potential effects on species that occur along the expected oil transport corridor is required. Analysis of the potential effects of several species on the likely transportation

route to U.S. ports along the West Coast were included in biological evaluations prepared by the Minerals Management Service (MMS) for Cook Inlet Lease Sale 149 and Gulf of Alaska-Yakutat Lease Sale 158. Analysis of potential effects on several species that may occur along the expected oil transport corridor to ports in the Far East was included in MMS's Final Environmental Impact Statement (FEIS) for Oil and Gas Lease Sale 144. The oil transport scenario for any NPR-A sale will likely remain the same, so evaluations of species along the transportation corridors are incorporated by reference from the biological evaluations for Sale 149 and Sale 158 and the FEIS for Sale 144.

Please review our list and notify us of your concurrence or revisions and of any new information concerning these species in relation to the planning area. To facilitate the review, we have provided a copy of this letter to your Anchorage Ecological Services Field Office. Upon receipt of your reply, preparation of the biological evaluation reviewing potential effects of the proposed action will begin. The MMS personnel, in cooperation with BLM's staff, will be preparing the biological evaluation for the Section 7 consultation. If you have any questions concerning this proposed action, please contact MMS biologists Joel Hubbard at (907) 271-6670 or Frank Wendling at (907) 271-6510.

We look forward to working with you and your staff in protecting and conserving endangered and threatened species.

/s/ Tom Allen

Attachment
Notice of Intent (3 pp)

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ALASKA STATE OFFICE
222 W. 7th Avenue, #13
ANCHORAGE, ALASKA 99513-7599

6840 NPRA (931)

MAY 6 1997

Mr. Steven Pennoyer
Director, Alaska Region
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

Dear Mr. Pennoyer:

The Bureau of Land Management (BLM) has initiated an Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) to update its management strategy for the northeast portion of NPR-A (see attached Notice of Intent, which includes a map of the area). The IAP/EIS will address the full range of BLM's management responsibilities in the planning area, including oil and gas leasing, wildlife protection, subsistence, and recreation. The plan will be finalized in the summer of 1998 and a Record of Decision is anticipated at the end of July, 1998. If oil and gas leasing results from the IAP/EIS, the lease sale will probably take place no sooner than September, 1998.

In accordance with the Endangered Species Act, Section 7, regulations governing interagency cooperation, we are contacting your agency requesting notification of any listed or proposed species or critical habitat that may be present in or affected by oil and gas exploration activities in the proposed lease sale area that should be included in the biological evaluation.

In the event that the IAP/EIS results in an oil and gas lease sale, analysis of potential effects on species that occur along the expected oil transport corridor is required. Analysis of the potential effects of several species on the likely transportation route to U.S. ports along the West Coast were included in biological evaluations prepared by the Minerals Management Service (MMS) for Cook Inlet Lease Sale 149 and Gulf of Alaska-Yakutat Lease Sale 158. Analysis of potential effects on several species that may occur along the expected oil transport corridor to ports in the Far East was included in MMS's Final Environmental Impact Statement (FEIS) for Oil and Gas Lease Sale 144. The oil transport scenario for any NPR-A sale will likely remain the same, so evaluations of species along the transportation corridors are incorporated by reference from the biological evaluations for Sale 149 and Sale 158 and the FEIS for Sale 144.

To facilitate the review, we have provided a copy of this letter to your Anchorage field office. Upon receipt of your reply, preparation of the biological evaluation reviewing potential effects of the proposed action will begin. The MMS personnel, in cooperation with BLM's staff, will be preparing the biological evaluation for the Section 7 consultation. If you have any questions concerning this proposed action, please contact MMS biologists Frank Wendling at (907) 271-6510 or Joel Hubbard at (907) 271-6670.

We look forward to working with you and your staff in protecting and conserving endangered and threatened species.

Sincerely,

/s/ Tom Allen

State Director

Enclosure
Notice of Intent (3 pg)

cc: Anchorage Ecological Field Office

AK931:JPayne:cla:X5477:5/2/97:t:emmfs2.wpd

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

97 MAY 30 AM 10:20

May 23, 1997

Tom Allen
State Director
Bureau of Land Management
222 West 7th Avenue, #13
Anchorage, Alaska 99513-7599

Dear Mr. Allen:

Thank you for your letter requesting a list of Threatened or Endangered species occurring in the area associated with National Petroleum Reserve-Alaska. The National Marine Fisheries Service is responsible for certain marine species listed under the Endangered Species Act of 1972, as amended (ESA). Of these, the bowhead whale Balaena mysticetus, is found within the waters of the Beaufort Sea off the Alaska coast. Several additional listed species occur in the Gulf of Alaska and along the vessel transportation routes to U.S. ports along the West Coast. This letter provides a list of the ESA-listed species that occur in Alaska. We suggest that you contact the NMFS Northwest Regional Office and the NMFS Southwest Regional Office for additional species that occur in the waters of Washington, Oregon and California. The ESA-listed species that are present in Alaskan waters are as follows:

Common Name	Scientific Name	Status
Bowhead whale	Balaena mysticetus	Endangered
Northern right whale	Eubalaena glacialis	Endangered
Fin whale	Balaenoptera physalus	Endangered
Humpback whale	Megaptera novaeangliae	Endangered
Sperm whale	Physeter macrocephalus	Endangered
Sei whale	Balaenoptera borealis	Endangered
Blue whale	Balaenoptera musculus	Endangered
Steller sea lion	Eumetopias jubatus	
Western stock		Endangered*
Eastern stock		Threatened*
Snake River sockeye salmon	Oncorhynchus nerka	Endangered
Snake River Spring/Summer Chinook Salmon	Oncorhynchus tshawytscha	Threatened
Snake River Fall Chinook Salmon	Oncorhynchus tshawytscha	Threatened

Under Section 7 of the ESA, a federal agency is required to consult with the Secretary of Commerce regarding the presence of these species or their designated critical habitat. If this presence is identified, the agency must then determine if the activity may affect these animals or habitats. If it finds the action would not affect these concerns, no further consultation is required. Otherwise, the action agency should notify NMFS of its findings and request consultation under the Act.

We hope this information is useful in fulfilling the requirements of the ESA. Please direct any questions you may have to Brad Smith in our Anchorage office at (907)271-5006.

Sincerely,

Steven T. Zimmerman Ph.D.
Chief, Protected Resources
Management Division

*The Steller sea lion is listed as an endangered species for stocks west of 144° W longitude and as a threatened species to the east. Rookeries, major haul outs, and special foraging areas have been designated as critical habitat for this species. These sites are identified in 50 CFR 226.12.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
ENVIRONMENTAL & TECHNICAL SERVICES DIVISION
525 NE Oregon Street
PORTLAND, OREGON 97232-2737

June 10, 1997 P/NW03

Mr. Frank Wendling
Minerals Management Service
Alaska OCS Region, Leasing and Environment Office
949 E. 36th Avenue, Room 300
Anchorage, Alaska 99508-4363

Re: Species List Request for the National Petroleum Reserve-Alaska

Dear Mr. Wendling:

The National Marine Fisheries Service (NMFS) has reviewed your June 9, 1997, facsimile to Ben Meyer requesting a list of threatened and endangered species for an Environmental Impact Statement for the national Petroleum Reserve - Alaska.

We have enclosed lists of those anadromous fish species that are listed as threatened or endangered under the Endangered Species Act (ESA), those that are proposed for listing, and those that are candidates for listing. This inventory includes only anadromous species under NMFS' jurisdiction that occur in the Pacific Northwest. The U.S. Fish and Wildlife Service should be contacted regarding the presence of species falling under its jurisdiction.

Available information indicates that the following listed salmon species may occur in the project area: Snake River Sockeye Salmon, (*Oncorhynchus nerka*); Snake River Fall Chinook Salmon, (*O. tshawytscha*); Snake River Spring/Summer Chinook Salmon (*O. tshawytscha*); S. Oregon/N. California Coast Coho Salmon (*O. kisutch*). The following proposed species may also occur in the project area: Klamath Mountains Province Steelhead (*O. mykiss*); Lower Columbia River Steelhead (*O. mykiss*); Upper Columbia River Steelhead (*O. mykiss*); Oregon Coast Steelhead (*O. mykiss*); and Snake River Basin Steelhead (*O. mykiss*).

This letter constitutes the required notification of the presence of any Federally listed threatened or endangered species or critical habitat under NMFS' jurisdiction in the permit area that may be affected by the proposed project (Appendix A to Part 330, Section C.13(5)(i)).

If you have any further questions, please contact Ben Meyer of my staff at (503) 230-5425.

Sincerely,

Ben Meyer
for Elizabeth Holmes Gaar, Chief
Habitat Conservation Division

Enclosure

ENDANGERED, THREATENED, AND PROPOSED SPECIES
UNDER NATIONAL MARINE FISHERIES SERVICE JURISDICTION

Listed Species

Snake River Sockeye Salmon	*Oncorhynchus nerka*
Snake River Fall Chinook Salmon	*O. tshawytscha*
Snake River Spring/Summer Chinook Salmon	*O. tshawytscha*
Umpqua River Cutthroat Trout	*O. clarki clarki*
S. Oregon/N. California Coast Coho Salmon	*O. kisutch*

Proposed for Listing

(The following ESUs)

Steelhead	*O. mykiss*
Klamath Mountains Province	
Lower Columbia River	
Upper Columbia River	
Oregon Coast	
Snake River Basin	

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United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

IN REPLY REFER TO

JUN 12 1997

Dr. William T. Hogarth
Regional Administrator
National Marine Fisheries Service
Southwest Regional Center
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

Dear Dr. Hogarth:

The Minerals Management Service (MMS) is jointly preparing an Integrated Activity Plan/ Environmental Impact Statement (IAP/EIS) for the Bureau of Land Management for the northeast portion of the National Petroleum Reserve, Alaska, which is located on the North Slope of Alaska. One of the proposed activities could be an oil and gas lease sale. Any oil discovered as a result of a lease sale and subsequently produced will likely be transported by pipeline from the planning area to the Trans-Alaska Pipeline System and subsequently transported by tanker to ports in the lower 48 states.

In accordance with the Endangered Species Act Section 7 regulations governing interagency cooperation, and at the recommendation from the National Marine Fisheries Service (NMFS), Alaska Region, we are contacting your agency requesting notification of any listed or proposed species or critical habitat that may be affected as a result of tankering oil south to ports in Washington, Oregon, and California. MMS has previously addressed in earlier EIS's and Biological Evaluations various endangered and threatened species including fin, humpback, sei, blue, northern right, and sperm whales, Steller's sea lion, Guadalupe fur seal, and green, leatherback, loggerhead, and Pacific ridley sea turtles.

On June 9, 1997, Mr. Frank Wendling from this office contacted Mr. Craig Wingert in your office by telephone and faxed to him a copy of our original species list letter dated May 6, 1997, sent to the NMFS, Alaska Region, and a copy of their response dated May 23, 1997. This letter confirms the request for species information requested by the telephone call and the fax. If you have any questions concerning this proposed action, please contact Frank Wendling at (907) 271-6510.

We look forward to working with you in our shared goal to protect threatened and endangered species.

Sincerely,

John Goll
Regional Director

cc: Mr. Craig Wingert
Mr. Ben Meyer, NMFS
Dr. Steve Zimmerman, NMFS
Mr. Tom Allen, BLM

United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Alaska OCS Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

IN REPLY REFER TO

JUN 12 1997

Ms. Elizabeth Gaar
Chief, Habitat Conservation Division
National Marine Fisheries Service
525 Northeast Oregon Street, Suite 500
Portland, Oregon 97232-2737

Dear Ms. Gaar:

The Minerals Management Service (MMS) is jointly preparing an Integrated Activity Plan/ Environmental Impact Statement (IAP/EIS) for the Bureau of Land Management for the northeast portion of the National Petroleum Reserve, Alaska, which is located on the North Slope of Alaska. One of the proposed activities could be an oil and gas lease sale. Any oil discovered as a result of a lease sale and subsequently produced will likely be transported by pipeline from the planning area to the Trans-Alaska Pipeline System and subsequently transported by tanker to ports in the lower 48 states.

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On June 9, 1997, Mr. Frank Wendling from this office contacted Mr. Ben Meyer in your office by telephone and faxed to him a copy of our original species list letter dated May 6, 1997, sent to the NMFS, Alaska Region, and a copy of their response dated May 23, 1997. This letter confirms the request for species information requested by the telephone call and the facsimile. We received your response by fax on June 10, 1997. Thank you for your very prompt response. If you have any questions concerning this proposed action, please contact Frank Wendling at (907) 271-6510.

We look forward to working with you in our shared goal to protect threatened and endangered species.

Sincerely,

John Goll
Regional Director

cc: Mr. Ben Meyer
Mr. Craig Wingert, NMFS
Dr. Steve Zimmerman, NMFS
Mr. Tom Allen, BLM

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213
TEL (310) 980-4000; FAX (310) 980-4018

JUN 26 1997 F/SW031:RCW

RECEIVED
JUN 30 1997
REGIONAL DIRECTOR, ALASKA OCS
Minerals Management Service
ANCHORAGE, ALASKA

John Goll
Regional Director
Minerals Management Service
Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

Dear Mr. Goll:

Thank you for requesting information regarding the presence of Federally listed threatened or endangered species or critical habitat that are managed by the National Marine Fisheries Service (NMFS) and may be affected by the proposed oil and gas activities that are being analyzed in the Integrated Activity Plan and Environmental Impact Statement for the National Petroleum Reserve on the North Slope of Alaska. This letter identifies those species which occur in California and are managed by the Southwest Region of NMFS. You should contact the Portland, Oregon office of our Northwest Regional office (503-231-2005) to obtain information on listed or proposed species occuring in Idaho, Washington, and Oregon.

Listed species occurring in California, in addition to those identified in your letter, include the following: (1) endangered Sacramento River winter-run chiock salmon (55 FR 46515 and 59 FR 440), (2) threatened Central California Coast coho salmon (61 FR 56138), and (3) threatened Southern Oregon/Northern California Coast coho salmon (62 FR 34588). Critical habitat has been designated for the Sacramento River winter-run chinook salmon (58 FR 33212). Critical habitat has not been proposed or designated for either of the two species of listed coho salmon. Proposed species occurring in California include several populations of steelhead (61 FR 41541): (1) Southern California Coastal steelhead, (2) South-Central California Coastal steelhead, (3) Central California Coastal steelhead, (4) Northern California Coastal steelhead, (5) Klamath Mountains Province steelhead, and (6) Central Valley steelhead. Critical habitat has not been proposed for any of these species of steelhead as yet. NMFS expects to publish a final listing decision regarding the proposal to list these steelhead populations by August 8, 1997.

If you have any questions regarding listed or proposed species managed by the Southwest Region of NMFS, please contact Mr. Craig Wingert at (310) 980-4021.

Sincerely,

for William T. Hogarth, Ph.D.
Acting Regional Administrator

Printed on Recycled Paper

07/09/97 WED 09:58 FAX 907 2713479 BLM AK-930 --- KMS L&E

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Rd.
Anchorage, Alaska 99503-6199

JUL 2 1997

IN REPLY REFER TO:

AES/ESO

Memorandum

To: State Director
Bureau of Land Management

From: Acting Regional Director
Region 7 Robyn Thorson

Subject: Request for List of Threatened and Endangered Species Potentially Affected by Proposed Oil and Gas Lease Sale in the National Petroleum Reserve-Alaska (NPR-A)

This responds to your May 6, 1997, request for a list of proposed and listed threatened and endangered species, which may be affected by activities, including oil and gas leasing, in the northeast portion of NPR-A (Planning Area). This information is for your use in preparation of the Integrated Activity Plan/Environmental Impact Statement, now in progress, which will address the full range of the Bureau of Land Management's responsibilities for the Planning Area.

As indicated in your memorandum, there are no designated or proposed critical habitats for any listed or proposed species potentially affected by activities in the Planning Area. The following listed species occur in the Planning Area.

Common Name	Scientific Name	Status
Spectacled eider	*Somateria fischeri*	threatened
Steller's eider	*Polysticta stelleri*	threatened (Alaska breeding pop.)

Please note that threatened status for the Steller's eider will become effective on July 11, 1997.

Analysis of the potential effects of oil and gas leasing on species that occur along the expected oil transport corridor is required. The Short-tailed albatross (*Diomedea albatrus*) is listed as a "foreign" endangered species under the Endangered Species Act of 1973, as amended; it is therefore considered listed anywhere outside the 3-mile territorial limit of the United States. Whereas waters beyond 3 miles are regulated for United States fisheries and off-shore mining to the 200-mile limit, the requirements for section 7 consultation apply to activities that occur between 3 and 200 miles from U.S. shores relative to "domestic" or "foreign" species. Therefore, section 7 consultation is required for tankering activities, which may adversely affect short-tailed albatrosses in the event of an oil spill or other marine accident.

We are also providing a provisional list of endangered, threatened, and candidate species occurring in coastal areas of California, Oregon, and Washington (attached). This list was provided to us by the Service's Regional Director, Region 1, on June 17, 1997, for use in the evaluation of Outer Continental Shelf Lease 170. Given the recent date, it is unlikely that there will be any changes to this list, but we are in the process of obtaining Region 1's concurrence for use of this list as the basis for your biological assessment. Your memorandum stated your intention to evaluate potential effects of oil transport by reference to biological evaluations prepared for Outer Continental Shelf Oil and Gas Lease Sales 149, 158, and the Final Environmental Impact Statement for Sale 144. This decision was made on the basis that the oil transport scenario for NPR-A would be similar to those analyzed for the previous lease sales. We have no objection to this approach, in general, except to note that additional analyses will be necessary for species proposed or listed since those documents were prepared.

We understand that your staff, and that of Minerals Management Service, are operating under a demanding schedule, and we will attempt to expedite transfer of any additional information. Please contact Philip Martin at (907) 456-0325 if you have any questions concerning this response. We look forward to continuing cooperation through all phases of the consultation process.

Attachment

ATTACHMENT

ENDANGERED, THREATENED, AND CANDIDATE SPECIES AND SPECIES OF CONCERN FOR COASTAL AREAS OF CALIFORNIA, OREGON, AND WASHINGTON

LISTED

MAMMALS

Pacific pocket mouse	*Perognathus longimembris pacificus* (E)
Point Arena mountain beaver	*Aplodontia rufa nigra* (E)
Salt marsh harvest mouse	*Reithrodontomys raviventris* (E)
Southern sea otter	*Enhydra lutris nereis* (T)

BIRDS

Aleutian Canada goose	*Branta canadensis leucopareia* (T)
American peregrine falcon	*Falco peregrinus anatum* (E)
Bald eagle (Washington, Oregon)	*Haliaeetus leucocephalus* (T)
Bald eagle (California)	*Haliaeetus leucocephalus* (E)
Brown pelican	*Pelecanus occidentalis* (E)
California clapper rail	*Rallus longirostris obsoletus* (E)
California least tern	*Sterna antillarum browni* (E)
Coastal California gnatcatcher	*Paliopnila californica californica* (T)
Least Bell's vireo	*Vireo bellii pusillus* (E, CH)
Light-footed clapper rail	*Rallus longirostris levipes* (E)
Marbled murrelet	*Brachyramphus marmoratus* (T, PCH)
Northern spotted owl	*Strix occidentalis caurina* (T, CH)
Southwestern willow flycatcher	*Empidonax traillii extimus* (E, PCH)
Western snowy plover	*Charadrius alexandrinus nivosus* (T, PCH)

AMPHIBIANS AND REPTILES

Arroyo toad	*Bufo microscaphus californicus* (E)
California red-legged frog	*Rana aurora draytonii* (T)
Green sea turtle	*Chelonia mydas* (E)

Leatherback sea turtle	*Dermochelys coriacea* (E, CH)
Loggerhead sea turtle	*Caretta caretta* (T)
Olive (=Pacific) Ridley sea turtle	Lepidochelys olivacea (E)
San Francisco garter snake	*Thamnophis sirtalis tetrataenia* (E)

FISHES

Delta smelt	*Hypomesus transpacificus* (T) (CH)
Tidewater goby	*Eucyclogobius newberryi* (E)

PLANTS

Antioch Dunes evening-primrose	*Oenothera deltoides ssp. howellii* (E)
Baker's stickyseed	*Blennosperma bakeri* (E)
Beach layia	*Layia carnosa* (E)
big-leaved crownbeard	*Verbesina dissita* (T)
California sea-blite	*Suaeda californica* (E)
Coastal dune's milk vetch	*Astragalus tener var. titi* (E)
Contra Costa wallflower	*Erysimum capitatum ssp. angustatum* (E)
Del Mar manzanita	*Arctostaphylos glandulosa ssp.crassifolia* (E)
Encinitas coyote bush	*Baccharis vanessae* (E)
Fountain thistle	*Cirsium fontinale var. fontinale* (E)
Gambel's watercress	*Rorippa gambellii* (E)
Howell's spineflower	*Chorizanthe howellii* (E)
Marin dwarf-flax	*Hesperolinon congestum* (T)
Marsh sandwort	*Arenaria paludicola* (E)
Menzies' wallflower	*Erysimum menziesii* (E)
Monterey gilia	*Gilia tenuiflora ssp. arenaria* (E)
Orcutt's spineflower	*Chorizanthe orcuttiana* (E)
Pt. Reyes clover lupine	*Lupinus tidestromii var. layneae* (E)
Presidio clarkia	*Clarkia franciscana* (E)
Presidio manzanita	*Arctostaphylos hookeri ssp. ravenii* (E)
Robust spineflower	*Chorizanthe robusta* (E)
Salt marsh bird's- beak	*Cordylanthus maritimus ssp. maritimus* (E)

San Diego button celery	*Eryngium aristulatum var. parishii* (E)
San Mateo thornmint	*Acanthomintha duttonii* (E)
San Mateo wooly sunflower	*Eriophyllum latilobum* (E)
Sonoma spineflower	*Chorizanthe valida* (E)
Tiburon jewelflower	*Streptanthus niger* (E)
Tiburon mariposa lily	*Calochortus tiburonensis* (T)
Tiburon paintbrush	*Castilleja affinis ssp. neglecta* (E)
Tidestrom's clover lupine	*Lupinus tidestromii var. tidestromii* (E)
Water howellia	*Howellia aquatilis* (T)
Western lily	*Lilium occidentale* (E)
White-rayed pentachaeta	*Pentachaeta bellidiflora* (E)
Yadon's wallflower	*Erysimum menziesii ssp. yadonii* (E)

INVERTEBRATES

California freshwater shrimp	*Syncaris pacifica* (E)
Lange's metalmark butterfly	*Apodemia mormo langei* (E)
Lotis blue butterfly	*Lycaeides argyrognomon lotis* (E)
Mission blue butterfly	*Icaricia icarioides missionensis* (E)
Myrtle's silverspot butterfly	*Speyeria zerene hippolyta* (E)
Oregon silverspot butterfly	*Speyeria zerene hippolyta* (T,CH)
Palos Verdes blue butterfly	*Glaucopsyche lygdamus palosverdesensis* (E)
Quino checkerspot butterfly	*Euphydryas editha quino* (E)
San Bruno elfin butterfly	*Incisalia mossii bayensis* (E)
San Diego fairy shrimp	*Branchinecta sandiegoensis* (E)
Smith's blue butterfly	*Euphilotes enoptes smithi* (E)
Riverside fairy shrimp	*Streptocephalus woottoni* (E)

PROPOSED AND CANDIDATE (Formerly Category 1 Candidate Species)

FISH

Sacramento splittail	*Pogonichthys macrolepidotus* (PT)
Bull trout	*Salvelinus confluentus* (C)

AMPHIBIANS

California tiger salamander	*Ambystoma californiense* (C)

REPTILES

Alameda whipsnake	*Masticophis lateralis euryxanthus* (PE)

INVERTEBRATES

Behren's silverspot butterfly	*Speyeria zerene behrensii* (PE)
Callippe silverspot butterfly	*Speyeria callippe callippe* (PE)

PLANTS

Baker's larkspur	*Delphinium bakeri* (C)
Contra Costa goldfields	*Lasthenia conjugens* (PT)
Hickman's cinquefoil	*Potentilla hickmanii* (PE)
La graciosa thistle	*Cirsium loncholepis* (C)
Laguna Beach liveforever	*Dudleya stolonifera* (PE)
Pallid manzanita	*Arctostaphylos pallida* (PT)
Santa Cruz tarweed	*Holocarpha macradenia* (C)
San Bruno Mountain manzanita	*Arctostaphylos imbricata* (PT)
San Francisco lessingia	*Lessingia germanorum* (PE)
Showy Indian clover	*Trifolium amoenum* (PE)
Soft-leaved indian paintbrush	*Castilleja mollis* (PE)
Soft bird's-beak	*Cordylanthus mollis ssp. mollis* (PE)
Sonoma alopecurus	*Alopecurus aequalis var. sonomensis* (PE)
Spreading navarretia	Navarretia fossalis (PT)
Thread-leaved brodiaea	*Brodiaea filifolia* (PT)
Yellow larkspur	*Delphinium luteum*

T=threatened; E=endangered; PE=proposed endangered; PT=proposed threatened; PCH=proposed critical habitat; CH=designated critical habitat

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Rd.
Anchorage, Alaska 99503-6199

Excerpts

IN REPLY REFER TO

AES/ESO/NAES

MAR 17 1998

Memorandum

To: State Director, Alaska
Bureau of Land Management

From: Acting Regional Director
Region 7 Robyn Thorson

Subject: Endangered Species Act Section 7 Consultation for the Integrated Activity Plan for the Northeast Portion of the National Petroleum Reserve - Alaska

This responds to your December 9, 1997, request for formal section 7 consultation pursuant to the Endangered Species Act of 1973, as amended, for the Integrated Activity Plan for the northeast portion of the National Petroleum Reserve - Alaska. The plan addresses the full range of the Bureau of Land Management's management responsibilities in the planning area, including all ground-impacting management actions such as oil and gas leasing, wildlife protection, subsistence, and recreation. A chronology of the consultation actions up to the present regarding the IAP is provided in Attachment 1.

The U. S. Fish and Wildlife Service reviewed the BLM's Biological Evaluation for Threatened and Endangered Species with respect to the IAP for the planning area, and other relevant information to evaluate the effects of the activities associated with the proposed IAP. Those activities evaluated include ground-impacting management actions such as aircraft use, hazardous- and solid-material removal and remediation, overland moves, seismic activities, and oil and gas exploration and development/production activities. Effects that are interrelated and interdependent to the activities proposed in the IAP (particularly to oil and gas exploration and development) were also evaluated and include an analysis of the potential effects of transporting oil on listed and proposed species and critical habitat along the shipping route for oil products from the planning area.

The format for the following biological opinion includes, first, analyses for the listed species that occur solely within Alaska, the threatened spectacled eider (*Somateria fischeri*), the threatened Alaska breeding population of Steller's eider (*Polysticta stelleri*), and the endangered short-tailed albatross (*Phoebastria albatrus*); and finally, species that occur within the shipping route in Alaska, Washington, Oregon, and California. Fifteen listed species and one designated critical habitat are the subject of this latter portion of the biological opinion. One proposed species and one proposed critical habitat comprise the conference report.

Reasonable and Prudent Measures for Spectacled and Steller's Eiders

In the following sections, the Service provides reasonable and prudent measures and terms and conditions that would serve to minimize the effects of *incidental* take on spectacled and Steller's eiders. The actions anticipated to cause adverse effects to the species could occur via four identified avenues: 1) oil and gas facilities (roads, runways, etc.) providing access for hunters that could kill spectacled or Steller's eiders or use lead shot in wetlands that could later be ingested by foraging eiders; 2) permanent impacts to habitat such as the filling of wetlands used for nesting or other behaviors; 3) temporary or permanent changes in the distribution and/or numbers of predators by refuse or other food sources being made available; and 4) temporary impacts to nest success and productivity by disturbance from activities near nests or brood rearing sites. The reasonable and prudent measures and terms and conditions included in this biological opinion, therefore, are designed to prevent take of spectacled and Steller's eiders through these avenues.

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of spectacled and Steller's eiders:

(1) Measures will be enacted to ensure that facilities and personnel associated with oil and gas development within the planning area do not result in take of spectacled or Steller's eiders by increasing access to the area by sport and subsistence hunters. These measures will address accidental or intentional take by shooting and indirect take that would result from sport and subsistence hunters using lead shot in wetland areas where spent shot could later be ingested by foraging eiders. This objective could be accomplished either by: a) strictly enforcing all existing regulations that prohibit sport and subsistence hunting of spectacled and Steller's eiders and enforcing prohibitions on the use of lead shot by waterfowl hunters in all areas accessed via oil and gas facilities; or b) preventing sport and subsistence hunters from using roads, runways, and other facilities for access.

(2) Measures will be enacted to prevent temporary or permanent changes in the distribution or numbers of predators by ensuring that food or refuse is not made available to avian or mammalian predators.

(3) Temporary impacts to spectacled and Steller's eider productivity due to disturbance and direct habitat impacts can be minimized by ensuring protection of females with nests. In areas where construction is planned, Service-approved nest surveys must be conducted during mid-June of each year in which construction activities are planned between May 30 and August 31. The protocol and timing of nesting surveys for spectacled and Steller's eiders will be determined in cooperation with the Service, and must be approved by the Service. Surveys should be conducted by biologists who have previous experience with spectacled and/or Steller's eider nest surveys.

Terms and Conditions for Spectacled and Steller's Eiders

In order to be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting /monitoring requirements. These terms and conditions are non-discretionary.

To prevent accidental or intentional shooting of spectacled or Steller's eiders and prevent the deposition of lead shot in wetlands, the BLM shall adopt one of the two following options:

(1a) The BLM shall enforce existing regulations that prohibit sport and subsistence hunting of spectacled and Steller's eiders and the use of lead shot for waterfowl hunting by persons accessing the area using oil and gas facilities such as roads and runways.

or

(1b) The BLM will prevent the use of oil and gas facilities such as roads and runways to provide access for sport and subsistence hunting.

(2) In the event that option 1a is adopted, the BLM will provide the Service with an annual report detailing: a) the number, activity type, and location of all activities using oil and gas facilities such as roads and runways as access; and b) the educational and enforcement actions taken to ensure compliance with existing regulations. In the event that option 1b is adopted, the BLM will provide the Service with an annual report detailing how hunters are prevented from using oil and gas facilities for access, and this report will be updated whenever there is a change in the implementation of enforcement of restrictions.

To minimize temporary or permanent changes in the distribution, numbers, or survivall of predators:

(3) The BLM shall prevent oil and gas facilities and personnel from providing wildlife with access to food or refuse. Annually, the BLM will provide the Service with a report detailing the educational, regulatory, and enforcement actions taken to ensure that predators or scavengers are not given access to human food or refuse.

(4) The BLM shall require permittees to use current technology to prevent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes. The annual report required in number (3) above shall also contain information on the use by ravens, raptors, and foxes of oil and gas facilities as nesting, denning, or shelter sites.

To reduce temporary impacts to productivity resulting from disturbance:

(5) Within 200 meters of occupied spectacled or Steller's eider nests, from May 20 through August 1, ground level activity (by vehicle or on foot) will be restricted to existing thoroughfares and construction of permanent facilities, placement of fill, alteration of habitat, and introduction of high noise levels is prohibited.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impacts of incidental take that might otherwise result from the proposed action. The reporting requirements contained in Terms and Conditions # 2 and 3 above are intended to provide the Service with the information needed to evaluate the efficacy of these reasonable and prudent measures and terms and conditions. With implementation of these measures the Service believes that no more than 25 spectacled eiders plus 12 spectacled eider nests, and 1 Steller's eider plus 1 Steller's eider nest will be incidentally taken. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately

provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Reasonable and Prudent Measures for Pacific Coast Species

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize the impact of take of the salt marsh harvest mouse, southern sea otter, bald eagle, peregrine falcon, Aleutian Canada goose, marbled murrelet, brown pelican, western snowy plover, California clapper rail, light-footed clapper rail, California least tern, tidewater goby, delta smelt, and Sacramento splittail:

1. Minimize the frequency and magnitude of oil spills from tankers carrying NPR-A oil.

Terms and Conditions for Pacific Coast Species

In order to be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following term and condition, which implements the reasonable and prudent measure described above. This term and condition is non-discretionary.

1. NPR-A oil can only be transported in double-hulled tankers that meet USCG licensing and pilot certification requirements, have adequate oil spill response equipment on-board, and comply with all other requirements of OPA 90 that fall under the jurisdiction and authority of BLM.

With regard to the proposed Sacramento splittail, the incidental take statement provided in this conference opinion does not become effective until the species is listed and the conference opinion is adopted as the biological opinion issued through formal consultation. At that time, the project will be reviewed to determine whether any take of the Sacramento splittail has occurred. Modifications of the opinion and incidental take statement may be appropriate to reflect that take. No take of the Sacramento splittail may occur between the listing of the species and the adoption of the conference opinion as the biological opinion.

Coordination of Incidental Take Statements with Other Laws, Regulations, and Policies

The U.S. Fish and Wildlife Service will not refer the incidental take of any migratory bird for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

June 23, 1998

Sally Wisley
Associate State Director
Bureau of Land Management
Alaska State Office
222 West 7th Avenue, #43
Anchorage, Alaska 99513-7599

Dear Ms. Wisley:

Thank you for your letter concerning the Integrated Activity Plan/Environmental Impact Statement (AP/EIS) for management actions within the National Petroleum Reserve-Alaska (NPRA). A Biological Evaluation (BE) has been prepared by the Bureau of Land Management to consider effects of these actions on threatened or endangered species under Section 7 of the Endangered Species Act; this letter responds to that document. The National Marine Fisheries Service (NMFS) will provide separate comments on the AP/EIS.

The BE considers the effects of leasing and exploration activities. Future development and production phases within NPRA will require re-initiation of Section 7 consultation procedures. Nonetheless, the BE presents discussion and preliminary analysis of these possible future actions so as to allow a reasonable assessment of the entire action's impact to threatened and endangered species. Presently, development and production scenarios are too speculative to support consideration of all phases, and we concur with the determination to approach consultation through this incremental step process. Because all development associated with these management actions would occur on land, and because development and production phases will require separate consultation, this analysis has addressed the endangered bowhead whale as the only listed species which may be affected and for which NMFS bears Federal responsibility. The BE concludes the bowhead whale would not be adversely affected by the proposed management actions. We concur with this assessment.

The BE provides stipulations to reduce or eliminate potential effects on fish and wildlife, including threatened or endangered species. We recommend revision of the proposed stipulations to include measures to reduce possible effects on bowhead whales due to shipping activities associated with NPRA. These should include recommendations to avoid or minimize shipping during whale migrations from September to mid-October, operate vessels inside migratory routes when possible, and coordinate large scale marine supply actions (such as sea-lift barge traffic) with the Alaska Eskimo Whaling Commission and North Slope Borough to avoid interference with subsistance hunts.

We appreciate this opportunity to comment. Please refer questions to Mr. Brad Smith at (907) 271-5006.

Sincerely,

Steven Pennoyer
Administrator, Alaska Region

cc: Thomas Napageak, Alaska Eskimo Whaling Commission, Barrow.
Dr. Tom Albert, North Slope Borough Wildlife Department, Barrow.
Frank Wendling, Minerals Management Service, Anchorage.

APPENDIX D

Section 810 of ANILCA, Findings and Evaluations

I. SUBSISTENCE EVALUATION FACTORS

The Alaska National Interest Lands Conservation Act (ANILCA) § 810(a) requires that a subsistence evaluation be completed for any Federal Agency determination to "withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands..." (16 U.S.C. § 3120). A subsistence evaluation under ANILCA § 810 must be completed for this IAP/EIS. The ANILCA also requires that this evaluation must include findings on three specific issues:

1. the effect of such use, occupancy, or disposition on subsistence uses and needs;
2. the availability of other lands for the purposes sought to be achieved; and
3. other alternatives that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes (16 U.S.C. § 3120(a).

If this initial evaluation results in findings that the proposed action "may significantly restrict" subsistence uses, ANILCA § 810 imposes additional requirements, including provisions for notice to the State and appropriate regional and local subsistence committees, a hearing in the vicinity of the area involved, and the making of certain determinations required by Section 810(a)(3) (16 U.S.C. § 3120(a)(3).

The evaluation and findings required by ANILCA § 810 are set out below for each of the six alternatives (including the Preferred Alternative and the no-action alternative) considered in this EIS.

To determine if a significant restriction of subsistence uses and needs may result from any of the alternatives discussed in this IAP/EIS, including their cumulative effects, the following three factors in particular are considered:

1. reductions in the availability of subsistence resources caused by a decline in the population or amount of harvestable resources;
2. reductions in the availability of resources used for subsistence purposes caused by alteration of their normal locations or distribution patterns; and
3. limitations on access to subsistence resources, including from increased competition for the resources

A significant restriction to subsistence may occur in at least two instances: (1) when an action substantially may reduce populations or their availability to subsistence users, and (2) when an action may substantially limit access by subsistence users to resources. Section IV on Environmental Consequences provides much of the data concerning levels of reductions and limitations that can be used to determine whether the level of effects of each alternative is high enough that there may be a significant restriction to subsistence. Section III provides information regarding areas and resources important for subsistence uses and the degree of dependence of affected villages on different subsistence populations. The information found in the IAP/EIS is relied on and incorporated here.

A subsistence evaluation and findings under ANILCA § 810 also must include a cumulative impacts analysis. Section II below begins with an evaluation and finding for the most intensive cumulative case as it is discussed in Section IV-H of the IAP/EIS. The cumulative effects discussion is followed by separate evaluations and findings for each of the six alternatives in the IAP/EIS and a finding for each that also considers the cumulative impacts. This approach helps the reader to separate the subsistence restrictions that may be caused by activities proposed by the IAP alternatives from those that may be caused by the past, present, and future reasonably foreseeable activities that may occur in the surrounding area.

II. ANILCA 810(a) EVALUATIONS AND FINDINGS FOR THE CUMULATIVE CASE AND THE SIX ALTERNATIVES

These evaluations are based on the information relating to the environmental and subsistence consequences of the multiple-sales scenarios for the cumulative case, the Preferred Alternative, and Alternatives B through E presented in Section IV of the IAP/EIS. An evaluation and finding also are made for Alternative A, the "no action" alternative. The stipulations discussed in Section II of the IAP/EIS are considered for the alternatives to which they apply. The evaluations and findings focus mostly on caribou, waterfowl, and fish, which are the most important

subsistence resources in the planning area. Moose, whales, and other species also are discussed, when effects to them are relevant to the evaluation and findings for a particular alternative.

A. **Evaluation and Findings for the Cumulative Case:**

1. **Evaluation:** Cumulative effects on subsistence-harvest patterns could be caused by all existing and planned development activities, multiple lease sales proposed for the present NPR-A planning area, possible additional sales in the remainder of the NPR-A and other planned projects on the North Slope. Future activities could include Federal and State offshore lease sales and State and private onshore activities and transportation of oil and gas by tankers or a pipeline. Whether any of these future activities actually would occur is unknown, but the following discussion assumes that all would reach the development and production stage. See Section IV of the IAP/EIS for a detailed description of the cumulative-case scenario, including possible oil field and infrastructure development that this evaluation uses. This assessment and finding assume that all future development in the NPR-A would be subject to stipulations of setbacks and seasonal restrictions that are similar to those proposed in the IAP.

Cumulative effects on caribou-calving distribution are likely to be long term over the life of the oil fields but probably local within 1.86 to 2.48 miles (3-4 kilometers) of roads located within calving areas. This reduction in calving and summer habitat use by cows and calves on the Central Arctic Herd (CAH) and the Teshekpuk Lake Herd (TLH) and, possibly, the Western Arctic Herd (WAH) caribou from future NPR-A leasing, represents a functional loss of habitat that may result in a long-term effect on caribou herd productivity. The ranges of the CAH and the WAH primarily are outside the planning area, but development activities that reduce their numbers could lead to more subsistence hunting-pressure on the TLH; however, this potential effect may not be measurable because of the great natural variability in caribou population productivity. Establishing the existence of a direct link to reduced harvests or more difficult access to subsistence resources under the cumulative case currently is impossible, but it is possible that these effects may exist in the future. The additional development pressure envisioned by the cumulative-case scenario could exacerbate changes in abundance and productivity of caribou and these changes may, in turn, adversely affect subsistence harvests.

There also could be changes in caribou distribution patterns that could negatively affect subsistence hunters. It also is possible that changes in the location of caribou calving areas may affect subsistence hunter success, if calving caribou were to move to areas that were more difficult for subsistence hunters to access.

Access by subsistence users to the Prudhoe Bay oil fields currently is restricted. Stipulations proposed by the IAP are intended to limit such broad restrictions in the planning area, but some restrictions for reasons of safety in the planning area as well as elsewhere could occur. Such a reduction to access could negatively affect subsistence users.

Any future gravel roads built from the NPR-A or any other North Slope development to the existing haul road could make access by nonsubsistence hunters easier, particularly if no restrictions on hunting from or near the roads apply. Although it is unlikely that such a road would ever be built and highly unlikely that unrestricted access and an accompanying increase in harvest would occur if it were, any increase in the numbers of hunters in the area could increase competition for caribou.

The cumulative effects on muskoxen, moose, wolves, and wolverines are likely to be local within about 1 to 2 miles of oil exploration and development facilities and resource inventory-survey activities and generally short term, with no significant adverse effects on their populations.

Although there would be more disturbance of waterfowl (including black brandt) and, possibly, more small intermittent oil spills in the cumulative case, the overall effects on waterfowl are expected to be minimal. Even a major oil spill would not change this assessment because of the nesting and feeding patterns of the waterfowl present in the Arctic.

Fish habitat that is protected by setbacks would receive minimal impacts from most activities, although a major oil spill in the Colville River could significantly affect several fish species.

The offshore oil development and transport that is possible under a cumulative case could result in oil spills in the marine environment. Any oil spill that taints, or is perceived to taint, whale or other marine mammals of importance to subsistence users could have a significant negative effect on those users. If such a spill affected migration patterns or distributions of any marine mammal used for subsistence, it also would have a significant negative effect on subsistence users. There should be little effect on any marine mammals from disturbance or noise and no effect on access.

From 1990 to 1997, the North Slope's permanent population grew at an annual rate of 2.7 percent, and Nuiqsut was the fastest growing village. This rate could continue for the foreseeable future with or without the development envisioned in the cumulative scenario discussed in the IAP/EIS. The effects of such growth on competition for subsistence resources are difficult to predict, but it is possible that over time there will be increased competition among local subsistence users. It is unlikely that the transient workers associated with oil and gas development will add to the competition, because they are ineligible for subsistence permits under existing Federal and State regulations.

2. Finding: The cumulative case meets the threshold of "may significantly restrict" subsistence resources or their use for caribou and requires a positive determination pursuant to ANILCA § 810. The distribution of caribou populations already may have been affected by Prudhoe Bay development, and access to subsistence resources currently is restricted there. Although procedures will be in place to ensure that future development affects access as little as possible, it still is probable that safety considerations will reduce the total area available for subsistence purposes. If major oil spills occur in the future, they could significantly affect both populations and distributions of fish and whales and other marine mammals, causing additional significant restriction of subsistence activities. Population growth over the life of the plan could increase competition for subsistence resources as could the construction of any road that would make access to subsistence resources easer for nonsubsistence hunters.

These restrictions may affect Barrow, Atqasuk, Nuiqsut, or any other North Slope village. Subsistence effects on other parts of Alaska, including southwestern Alaska, would not reach the "may significantly restrict" threshold, because only minimal impacts on waterfowl are considered possible even for the cumulative case.

B. Evaluation and Findings for the Preferred Alternative:

1. Evaluation:

a. ***The Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs:*** Under the Preferred Alternative, 87 percent of the planning area would be made available for oil and gas leasing. A 589,000-acre area north and east of and including much of the Teshekpuk Lake Special Area, and the lake itself, would be unavailable for leasing. Virtually all of the most important waterfowl habitat and a large part the most important caribou habitat are within the unavailable area. Calving grounds located outside of the unavailable area are protected by severely restricting oil and gas surface occupancy, thus minimizing any disturbance. Important fish habitat would be protected by stipulations that would provide setbacks of ½ to 3 miles on major rivers and creeks and by a no oil and gas surface occupancy provision within the deepwater lakes area. Additionally, no surface occupancy would be allowed within ¼ mile of other fish-bearing lakes. This alternative would prohibit construction of roads (other than temporary ice roads) connecting the planning area with the existing road network outside the planning area. Several stipulations specifically would address subsistence-user concerns about maintaining access and other issues and would provide them with an effective way to participate in future decisions potentially affecting subsistence resources and uses.

The BLM would cooperate with adjacent landowners to develop a Colville River Management Plan for the existing Colville River Special Area. Subsistence would be one of the issues addressed by the plan. The BLM also would recommend that the Secretary of the Interior add the entire Kikiarorak and Kogosukruk rivers to this Special Area. The Pik Dunes area would be added to the Teshekpuk Lake Special Area (TLSA).

The combination of making unavailable for leasing the most important area for caribou and waterfowl, including most of the Teshekpuk Lake Special Area, and providing for no surface occupancy or buffers in the forms of setbacks in other areas of importance to caribou, fish, moose, and furbearers would minimize impacts on these

resources from development. A management plan that addresses subsistence issues in the Colville River Special Area could provide additional protection for subsistence resources, such as moose, and subsistence users. Adding the Pik Dunes area to the TLSA could benefit caribou.

The level of effects to subsistence resources would depend somewhat on the timing of the multiple sales possible under this alternative. Several sales held closely together would have somewhat more effect than sales with longer intervals between them. Even with closely spaced multiple sales under this alternative, however, with so much important habitat for both waterfowl and caribou being kept unavailable for leasing and the existence of strict protective measures in the proposed stipulations, including setbacks from fish habitat for areas that are open to leasing, effects on populations and distributions of subsistence resources and uses would be minimal.

Overall, short-term, localized, nonlethal impacts on population numbers and distributions from disturbance and oil spills are expected on the TLH caribou, other terrestrial mammals, fish, waterfowl, and bowhead whales or other marine mammals. These impacts would have little effect on the subsistence harvests of any village in or near the area and negligible impact on subsistence resources and uses outside the North Slope region, including southwestern Alaska. Subsistence-hunter concerns about access to resources and resource contamination are accommodated through the stipulations including provisions for their participation in each subsequent stage of development, although access to areas might be minimally restricted for safety reasons. Prohibiting a road would help minimize competition from non-subsistence hunters.

b. ***The Availability of Other Lands for Purposes Sought to be Achieved and Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes:*** Pursuant to its responsibilities under the National Petroleum Reserves Production Act and the Federal Land Policy and Management Act, the BLM is developing an IAP/EIS for this area to determine what surface protective designations and measures should be implemented and whether and how to formulate an oil and gas leasing program. With regard to oil and gas leasing, the planning area under consideration in all of the alternatives discussed in this document was chosen because of its proximity to existing oil fields and their accompanying infrastructure, which could make it economically practical to consider oil and gas development at this time. Within the planning area, alternatives ranging from making none of the area available for oil and leasing to making it all available were considered and the Preferred Alternative reflects the best balance of all the management goals for this area. Other NPR-A lands to the west and south of the planning area were considered during the preplanning process, but their increased distance from existing fields and infrastructure makes their development economically infeasible at this time. In addition, if BLM had made lands available farther west, subsistence impacts would only be shifted closer to Barrow and not eliminated or, necessarily, reduced because subsistence areas and uses extend throughout the NPR-A. Other possible BLM-managed lands outside of the NPR-A are either too remote from existing infrastructure or their oil and gas potential is too low, or both; and they also would not satisfy a central objective of this planning process, which is to plan for oil and gas leasing in the NPR-A. State and Native Corporation lands cannot be considered in a BLM plan.

2. **Findings:**

a. *Without the Cumulative Case*: The effects of the Preferred Alternative fall below the "may significantly restrict" threshold, which is the test for a positive finding under ANILCA § 810. The impacts to subsistence resources and uses discussed above for this alternative are minimal. This finding applies to villages in and near the planning area and to subsistence users in other regions of Alaska, including southwestern Alaska.

b. *With the Cumulative Case:* Section II.A.2 finds that the cumulative case presented in Section IV-H of the IAP/EIS exceeds the "may significantly restrict" threshold, and that a positive ANILCA § 810 determination must be made. Although the effects of the activities proposed under the Preferred Alternative fall below the threshold, adding them to those of the cumulative case results in a level of effects that "may significantly restrict" subsistence uses.

This finding applies to Barrow, Atqasuk, Nuiqsut, and to other villages on the North Slope but not to subsistence users in other regions of the State, including southwestern Alaska. The exclusion of other regions is based on the fact that even including the cumulative impacts, possible effects to waterfowl are considered to be minimal.

C. Evaluation and Findings for Alternative A:

1. Evaluation:

a. *The Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs:* This is the no-action alternative for the IAP, and it proposes that existing management would continue. There would be no oil and gas lease sales, although seismic studies may or may not continue to occur. There are assessments in the IAP/EIS for both possibilities, and this evaluation and finding will consider both. Aboveground pipelines could cross all lands. Other activities that would continue include guided and nonguided recreation, nonsubsistence hunting, hazardous-material cleanup, and various scientific studies. Protection for subsistence resources would be provided by existing Special Area designations, Special Management Zones, and existing stipulations.

Impacts on subsistence for nonseismic activities range from negligible effects on fish and bowhead whales to minor, short-term, and local effects on caribou and other terrestrial mammals, waterfowl, and marine mammals. Subsistence resources of the communities of Barrow, Atqasuk, and Nuiqsut could be affected periodically from ground-disturbance activities and small oil spills, but there would be no effects on subsistence harvests. Effects would take the form of very minor population reductions and/or short-term disruptions of distribution patterns. Access to subsistence uses would not change from the present situation in which restrictions are nonexistent within the planning area.

Impacts with seismic activity could displace a few polar bears in dens and affect a few cubs' survival but would not have a significant effect on the bear population. Short-term and local effects may be expected on caribou and other terrestrial mammals and waterfowl; negligible effects would be expected on Arctic fish populations and bowhead whales and other marine mammals.

Nonsubsistence hunting would have little effect on subsistence users. No other activities that would continue under the no-action alternative would have adverse effects on subsistence.

b. *The Availability of Other Lands for Purposes Sought to be Achieved and Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes:* As this is the no-action alternative, none of the other alternatives presented in the IAP/EIS would reduce impacts on subsistence resources and uses more. The option of no seismic studies would have fewer effects than with seismic studies.

2. Finding:

a. *Without the Cumulative Case:* With or without seismic activity, Alternative A does not reach the threshold of "may significantly restrict" subsistence uses, and a negative finding is appropriate. The level of impacts discussed above for this alternative are low to negligible, and there would be no apparent effects on subsistence resources or their distributions, harvests, or access in, or near, the study area or elsewhere in the state, including southwestern Alaska.

b. *With the Cumulative Case:* Section II.A.2 finds that the cumulative case presented in Section IV-h of the IAP/EIS exceeds the "may significantly restrict" threshold, and that a positive ANILCA § 810 determination is appropriate. Although the effects of the activities proposed under Alternative A fall well below the threshold, adding them to those of the cumulative case results in a level of effects that does exceed the threshold, and a positive determination under ANILCA § 810 is necessary.

This finding applies to Barrow, Atqasuk, Nuiqsut, and to other villages on the North Slope, but not to subsistence users outside the region, including southwestern Alaska. The negative finding for subsistence users in other parts of the State is based on the fact that even under the cumulative case, possible effects to waterfowl are considered to be minimal.

D. Evaluation and Finding for Alternative B:

1. **Evaluation:**

a. *The Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs:* This alternative would make 53 percent of the planning area available for oil and gas leasing while emphasizing protection of specific surface resources, including all major subsistence species. Aboveground pipelines could cross all lands except part of the Colville River, and seismic studies could occur on all lands. In areas that would be open to leasing, stipulations would provide protective restrictions intended to protect subsistence and other resources. A road connecting the planning area to the existing haul road could be authorized. A portion of the Colville River would be designated as a wild river in the Wild and Scenic River System, a Bird Conservation Area along the Colville would be proposed, and the Pik Dunes would be added to the Teshekpuk Lake Special Area.
Effects to terrestrial mammals, including caribou, would increase over those of Alternative A, but no significant impacts to any populations or their distributions are anticipated. The overall level of effects to all species would depend on the timing of the multiple sales possible under this alternative. Several sales held closely together would have more effect than sales with longer intervals between them. Even with closely spaced multiple sales under this alternative, however, the most important habitat for caribou, waterfowl, and fish would be unavailable for leasing, and strict protective measures would be imposed in the proposed stipulations for areas that are open to leasing. As a result, effects on subsistence resources and uses would be minimal. Several stipulations address subsistence hunters' concerns over access, and they should help to ensure only minimal effects on access to hunting areas in certain safety-related situations. Added pressure from nonsubsistence hunters would be reduced by applying stipulations to ensure hunting is not allowed near a new road. Adding lands on the Colville and the Pik Dunes area to conservation units or special areas potentially would have positive effects on subsistence species and their uses.

b. *The Availability of Other Lands for Purposes Sought to be Achieved and Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes:* See Section II.A.1.b for a discussion of this subject that applies to Alternatives B through E and the Preferred Alternative.

2. **Finding:**

a. *Without the Cumulative Case:* Alternative B fails to reach the "may significantly impact" threshold required for a positive finding under ANILCA § 810. Some animal populations of importance to subsistence would receive either minimal impacts or short-term, nonlethal impacts, and these impacts would be higher than those of Alternative A, but no population would be significantly impacted as far as its numbers or distributions are concerned. The existence of stipulations addressing subsistence-hunter access should minimize the effects on access to hunting areas. This finding applies to villages in or near the planning area as well as to subsistence users in other regions of Alaska, including southwestern Alaska.

b. *With the Cumulative Case:* Section II.A.2 finds that the cumulative case presented in Section IV of the IAP/EIS exceeds the "may significantly restrict" threshold, and that a positive ANILCA § 810 determination is appropriate. Although the effects of the activities proposed under Alternative B fall below the threshold, adding them to those of the cumulative case results in a level of effects that does exceed the threshold, and a positive finding under ANILCA § 810 is necessary.

This finding applies to Barrow, Atqasuk, Nuiqsut, and to other villages on the North Slope but not to subsistence users in other regions of the State, including southwestern Alaska. The negative finding for subsistence resources and uses outside the North Slope region is based on the fact that even under the cumulative case, possible effects to waterfowl are considered to be minimal.

E. **Evaluation and Finding for Alternative C:**

1. **Evaluation:**

a. *The Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs:* Alternative C would make 72 percent of the planning area available for oil and gas leasing. The most important habitat for caribou and waterfowl would be kept unavailable for leasing as would some important fish habitat; however, the

area south of Teshekpuk Lake where some of the deep lakes contain high-value fish habitat would be made available for leasing, and protection would be provided by setbacks from fish lakes and streams. A portion of the Colville River would be included as a scenic river in the Wild and Scenic River System, a Bird Conservation Area would be proposed along the Colville, and the Pik Dunes would be added to the Teshekpuk Lake Special Area. Aboveground pipelines could cross all lands, and seismic studies could occur on all lands. A road connecting the planning area to the existing haul road could be authorized. In areas that would be open to leasing, stipulations would provide protective restrictions intended to protect subsistence and other resources.

Alternative C would result in a slight increase in effects from those discussed for Alternative B, but impacts to terrestrial mammals, (including caribou and moose and furbearers) and bowhead whales and other marine mammals still would be minor, short term, and localized. Increases in disturbance and oil spills are expected, but overall populations would not be impacted. The level of effects to waterfowl and fish would depend somewhat on the timing of the multiple sales possible under this alternative. Several sales held closely together would have more effects than sales with longer intervals between them. Even with closely spaced multiple lease sales under this alternative, however, the most important habitat for caribou, waterfowl, and some of the important fish habitat would be unavailable for leasing, and strict protective measures would be imposed in the proposed stipulations for areas that are open to leasing. As a result, effects on subsistence-resource numbers and distributions would be minimal. Effects to resources harvested by subsistence hunters would have little impact on overall harvests.

Concerns about subsistence-hunter access to resources would be addressed through a required consultation process, although there might be some very limited restriction of access to some areas for safety reasons. Added pressure from nonsubsistence hunters would be reduced by applying stipulations to ensure hunting is not allowed near a new road. Aboveground pipelines could cross all lands within the planning area but would have to be designed to avoid disruptions of caribou migration patterns. Adding lands on the Colville and the Pik Dunes area to conservation units or special areas potentially would have positive effects on subsistence species and their uses.

b. ***The Availability of Other Lands for Purposes Sought to be Achieved and Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes:*** See Section II.A.1.b for a discussion of this subject that applies to Alternatives B through E and the Preferred Alternative.

2. Finding:

a. ***Without the Cumulative Case:*** Alternative C does not reach the "may significantly impact" threshold required for a positive finding under ANILCA § 810. Impacts to populations and distributions of subsistence resources would be minimized by not leasing important caribou and waterfowl areas and by including stipulations to protect important habitat for fish and other species. This finding applies to villages in or near the planning area as well as to subsistence uses in other regions of Alaska, including southwestern Alaska.

b. ***With the Cumulative Case:*** Section II.A.2 finds that the cumulative case presented in Section IV-H of the IAP/EIS exceeds the "may significantly restrict" threshold, and that a positive ANILCA § 810 determination is therefore appropriate. Although the effects of the activities proposed under Alternative C fall below the threshold, adding them to those of the cumulative case results in a level of effects that does exceed the threshold, and a positive determination under ANILCA § 810 is necessary.

This positive finding applies to Barrow, Atqasuk, Nuiqsut, and to other villages on the North Slope but not to subsistence resources and uses in other parts of Alaska, including southwestern Alaska. The negative finding for subsistence uses outside the North Slope region, including southwestern users, is based on the fact that even under the cumulative case, possible effects to waterfowl are considered to be minimal.

F. Evaluation and Finding for Alternative D:

1. Evaluation:

a. ***The Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs:*** Alternative D

would make 90 percent of the planning area available for oil and gas leasing. The only area that would be unavailable is located to the north and west of Teshekpuk Lake and includes all of the high-value habitat for molting geese, 464,000 acres of important caribou habitat, and a smaller number of acres of important fish habitat. The 755,000 acres of important caribou habitat that would be made available for leasing would be subject to protective seasonal and other stipulations to reduce impacts from disturbance and oil spills to both the habitat and the caribou. Other stipulations would provide protection for important subsistence fish, waterfowl, and other resources in the entire available area by providing seasonal restrictions and setbacks from waterbodies and wetlands. A portion of the Colville River would be included as a recreational river in the Wild and Scenic River System, the river would be proposed as a Bird Conservation Area, and the Pik Dunes would be added to the Teshekpuk Lake Special Area. Aboveground pipelines could cross all lands within the planning area but would have to be designed to avoid disruptions of caribou migration patterns. A road connecting the planning area to the existing haul road could be authorized.

Effects from multiple-sales under the scenario for this alternative could increase the numbers of calving caribou displaced by oil field development over the relatively modest effects of one lease sale. This effect would persist over the life of any oil fields and may reduce productivity and abundance of Teshekpuk Lake caribou. The level of effects to waterfowl and fish would depend on the timing of the multiple sales possible under this alternative. Several sales held closely together would have more effects than sales with longer intervals between them. Even with closely spaced multiple lease sales under this alternative, however, the most important habitat for waterfowl and some of the important fish habitat would be unavailable for leasing, and strict protective measures would be imposed in the proposed stipulations for areas that are open to leasing. As a result, the effects on populations and distributions of subsistence resources and their uses would be minimal.

Concerns about subsistence-hunter access to resources would be addressed through a required consultation process, although there might be some very limited restriction of access to some areas for safety reasons. Added pressure from nonsubsistence hunters would be reduced by applying stipulations to ensure hunting is not allowed near a new road. Adding lands on the Colville and the Pik Dunes area to conservation units or special areas potentially would have positive effects on subsistence species and their uses. Effects on all subsistence species would be higher than those expected for Alternatives A, B, and C and the Preferred Alternative.

b. ***The Availability of Other Lands for Purposes Sought to be Achieved and Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes:*** See Section II.A.1.b for a discussion of this subject that applies to Alternatives B through E and the Preferred Alternative.

2. Finding:

a. *Without the Cumulative Case:* Alternative D meets the threshold of "may significantly restrict" subsistence resources or their use for caribou and thus requires a positive determination pursuant to ANILCA § 810. The effect of multiple sales would be increased development impacts and could result in decreases in habitat availability and consequent shifts in resource distribution and concomitant decreases in the areas available to subsistence hunters. This could make access more difficult and reduce subsistence harvests in Barrow, Atqasuk, and (especially) Nuiqsut. The unavailability of most key waterfowl habitat for leasing and proposed setbacks and restrictions in available areas would result in only minimal impacts to waterfowl and fish. A negative finding is therefore appropriate for uses of these species, because waterfowl would experience only minor effects. This finding applies to all of Alaska, including the southwestern area of the State.

b. *With the Cumulative Case:* Section II.A.2 finds that the cumulative case presented in Section IV of the IAP/EIS exceeds the "may significantly restrict" threshold, and that a positive ANILCA § 810 determination is appropriate. The Central Arctic caribou herd is most affected by the actions of the cumulative case, while it is the Teshekpuk Lake herd that Alternative D may significantly affect. Overall, restrictions on two herds could make it more difficult for subsistence caribou hunters to meet their needs.

This finding applies to Barrow, Atqasuk, Nuiqsut, and to other villages on the North Slope, but not to subsistence uses outside the region, including southwestern Alaska. The negative finding for other regions of the State is based

on the fact that even under the cumulative case, possible effects to waterfowl are expected to be minimal.

G. Evaluation and Finding for Alternative E:

1. Evaluation:

a. *The Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs:* This alternative makes 100 percent of the planning area available for oil and gas leasing. Protection of key subsistence species and their habitat relies on a combination of seasonal restrictions and setbacks discussed in Section II of the IAP/EIS. Aboveground pipelines could cross all lands within the planning area but would have to be designed to avoid disruptions of caribou migration patterns. A road connecting the planning area to the existing haul road could be authorized. A Bird Conservation Area on the Colville River would be proposed, and the Pik Dunes area would be added to the Teshekpuk Lake Special Area.

The oil fields projected under the development scenario for this alternative are expected to persistently displace calving Teshekpuk Lake caribou, and this displacement may reduce productivity and abundance of the herd. Overall, effects are not expected to have significant impacts on subsistence harvest patterns in Barrow and Atqasuk, although they might; and the chances are higher that oil-development activity would make Nuiqsut's access to and pursuit of caribou more difficult. Setbacks restricting oil and gas activities from the shores of lakes in the Teshekpuk Lake goose-molting area are expected to effectively ensure that impacts to subsistence waterfowl species would be localized and temporary. Effects to other subsistence species are expected to be minimal.

Concerns about subsistence-hunter access to resources would be addressed through a required consultation process, although there might be some very limited restriction of access to some areas for safety reasons. Added pressure from nonsubsistence hunters could be reduced by applying stipulations to ensure hunting is not allowed near a new road . Adding lands on the Colville and the Pik Dunes area to conservation areas or special areas potentially would have positive effects on subsistence species and their uses. Because this alternative opens a larger portion of the planning area than any other alternative, its impacts to subsistence are expected to be the most extensive of the six.

b. *The Availability of Other Lands for Purposes Sought to be Achieved and Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes:* See Section II.A.1.b for a discussion of this subject that applies to Alternatives B through E and the Preferred Alternative.

2. Finding:

a. *Without the Cumulative Case:* Alternative E meets the threshold of "may significantly restrict" subsistence resources or their use for caribou and requires a positive determination pursuant to ANILCA § 810. Possible effects to calving caribou in the Teshekpuk lake area could cause population losses, changes in distribution and subsistence impacts that would meet this threshold. These effects may make access more difficult and reduce subsistence harvests in Barrow, Atqasuk, and (especially) Nuiqsut. These effects would be felt most strongly in Nuiqsut and to a lesser extent in Barrow and Atqasuk. Because the effects under this alternative to waterfowl and other species would be localized and temporary, the "may significantly restrict" threshold would not be met for these species, and there also would be minimal effect on subsistence resources and uses in other regions of the State, including southwestern Alaska.

b. *With the Cumulative Case:* Section II.A.2 finds that the cumulative case presented in Section IV-H of the IAP/EIS exceeds the "may significantly restrict" threshold, and that a positive ANILCA § 810 determination is appropriate. The Central Arctic caribou herd is most affected by the actions considered in the cumulative case, while it is the Teshekpuk Lake herd that Alternative E may significantly effect. Overall, restrictions on two herds could make it much more difficult for subsistence caribou hunters to meet their needs. No other subsistence resources or uses exceed the "may significantly restrict" threshold.

This finding applies to Barrow, Atqasuk, Nuiqsut, and to other villages on the North Slope, but not to subsistence uses in other regions of the State, including southwestern Alaska. The negative finding for other regions of Alaska

is based on the fact that even under the cumulative case, possible effects to waterfowl are considered to be minimal.

III. NOTICE AND HEARINGS

The ANILCA § 810(a) provides that no "withdrawal, reservation, lease, permit, or other use, occupancy or disposition of the public lands which would significantly restrict subsistence uses shall be effected" until the Federal Agency gives the required notice and holds a hearing in accordance with § 810(a)(1) and (2). The BLM provided notice in the *Federal Register* on December 5, 1997, that it had made positive findings pursuant to § 810 that Alternatives D and E in the IAP/EIS met the "may significantly restrict" threshold. Public hearings were held in Nuiqsut, Atqasuk, Anaktuvuk Pass, and Barrow from January 12-15, 1998. At the request of the Associated Council of Village Presidents, a public hearing was held in Bethel on May 12, 1998, to give the people southwestern Alaska an opportunity to comment. Notice of this hearing appeared in the *Federal Register* on April, 5, 1998. Many of the speakers at these hearings indicated their concerns that any development within the planning area minimize impacts on subsistence resources. While most were not necessarily opposed to some kind of oil and gas development, they also wanted their opportunities to pursue subsistence activities to continue.

Much concern about the cumulative effects of the many existing and proposed oil and gas projects on the North Slope was expressed in these hearings and in the public comments received as part of the NEPA process. In response to this comment, BLM reconsidered its ANILCA § 810 evaluation and determined that the cumulative effects of all past, present, and reasonably foreseeable development on the North Slope met the "may significantly restrict" threshold for all alternatives, although only Alternatives D and E meet this threshold on their own. This document reflects that decision.

IV. SUBSISTENCE DETERMINATIONS UNDER § 810(a)(3)(A), (B), and (C)

The ANILCA § 810(a) provides that no "withdrawal, reservation, lease, permit, or other use, occupancy or disposition of the public lands which would significantly restrict subsistence uses shall be effected" until the Federal Agency gives the required notice and holds a hearing in accordance with § 810(a)(1) and (2), and makes the three determinations required by § 810(a)(3)(A), (B), and (C). The BLM has found in this subsistence evaluation that all the alternatives considered in this IAP/EIS (including the no-action alternative), when considered together with all the past, present, and reasonably foreseeable future cumulative effects discussed in the EIS, may significantly restrict subsistence uses. Therefore, BLM undertook the notice and hearing procedures required by ANILCA § 810(a)(1) and (2), as described above, and now must make the three determinations required by § 810(a)(3)(A), (B), and (C). 16 U.S.C. § 3120(a)(3)(A), (B), and (C).

Agency action to withdraw, lease, or otherwise permit a use, occupancy, or disposition of the public lands that may result in a significant restriction on subsistence uses may be effectuated only after the agency has determined that:

(A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands;
(B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition; and
(C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.16 U.S.C. § 3120(a)(3)(A), (B), and (C).

The determinations below satisfy these ANILCA requirements.

A. *Significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands.* The NPRPA provides for "an expeditious program of competitive leasing of oil and gas" in the NPR-A "notwithstanding any other provision of law" (42 U.S.C. § 6508). At the same time, the statute also requires that all oil and gas activities "undertaken pursuant to this section shall include or provide for such conditions, restrictions, and prohibitions as the Secretary deems necessary or appropriate to mitigate reasonably foreseeable and significantly adverse effects on the surface resources" of the NPR-A. Id. It was in furtherance of these dual objectives, together with other management guidance found in the NPRPA, FLPMA,

NEPA, and ANILCA that this IAP/EIS was undertaken. After considering a broad range of alternatives, a Preferred Alternative was developed that provides for oil and gas leasing and also puts in place numerous protective designations and measures for important subsistence resources and subsistence-use areas. The consideration of where exactly to allow leasing within the planning area and where to exclude it, and whether to prohibit surface occupancy or to provide other protective stipulations, required a careful balancing of sound management principles as set out in the NPRPA, FLPMA, and other statutes. The balance in the Preferred Alternative considers the necessity for economically feasible lease sales and also provides maximum effective protections minimizing any impacts on subsistence resources and uses.

For example, under the Preferred Alternative coastal resources of importance to subsistence users such as fish, whales, marine mammals, and birds are protected by not allowing leasing and restricting most surface occupancy in the Teshekpuk Lake Surface Protection Area. Virtually the entire goose molting LUEA is excluded from leasing, and leasing or surface occupancy also is eliminated or restricted in the great majority of the Teshekpuk Lake Caribou Habitat LUEA. Subsistence hunting and fishing areas around Teshekpuk Lake, along Fish and Judy creeks, the Ikpikpuk and Miguakiak rivers, and along the Colville, Kikiakrorak, and Kogosukruk rivers are protected by restricting most surface occupancy associated with oil and gas activities in those areas. Deep lakes supporting fish are surrounded by buffers, and subsistence camps and cabins are protected by significant setbacks and surface occupancy restrictions. The Preferred Alternative also would establish specific procedures and advisory bodies to address subsistence concerns and to provide a mechanism for continued research, consultation with subsistence users and conflict avoidance at each subsequent stage of oil and gas exploration and development. Stipulations in the Preferred Alternative provide for continued reasonable access by subsistence users through developed areas to avoid as much as possible any restrictions on access to subsistence resources. An interconnecting road network connecting the planning area to existing oil fields to the east was specifically prohibited in the Preferred Alternative, thus alleviating concerns about any possible increased competition for subsistence resources from persons residing outside the region.

These measures and others contained in the stipulations applied to the Preferred Alternative were proposed specifically to ensure that subsistence resources and uses are not significantly restricted by the proposed action. Because of the numerous restrictions and protections incorporated as part of the Preferred Alternative, BLM has found that the Preferred Alternative by itself would not result in significant restrictions of subsistence resources and uses. However, considered together with past, present, and reasonably foreseeable future cumulative effects of possible oil and gas activities on adjacent lands, including State, privately owned, and offshore areas that are not under BLM's control, the possibility exists that all the activities combined may significantly restrict subsistence uses. This possible restriction on subsistence uses could be lessened somewhat by not making any of the planning area available for oil and gas leasing, but this would not accomplish the statutory management objectives the IAP was undertaken to address. Moreover, even if BLM were to adopt the no-action alternative, the cumulative impacts on surrounding lands still reaches the may-significantly-restrict threshold under ANILCA § 810.

The BLM has considered and balanced all these factors; including, most prominently, the carefully crafted restrictions and limitations that were included in the Preferred Alternative to address subsistence concerns and to provide significant protection for subsistence resources and uses. The BLM has been determined that the significant restriction that may occur under the Preferred Alternative, when considered together with all the possible impacts of the cumulative case, is necessary, consistent with sound management principles for the use of these public lands, for BLM to fulfill the management goals for the planning area as guided by the statutory directives in the NPRPA, FLPMA, and other applicable laws.

B. ***The proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition.*** The BLM has determined that the Preferred Alternative involves the minimal amount of public lands necessary to accomplish the purposes of the IAP. Deciding where and how much land to make available for oil and gas leasing within the planning area involves the consideration of a number of factors, including where the high potential areas for oil and gas resources are found within the planning area, the amount and location of lands that are necessary for leasing to have an economically feasible leasing program, the importance of surface resources and uses, and the measures which can be taken to reduce or eliminate the possibility of a significant restriction on subsistence. Given these important factors, the process for determining which lands to offer for oil and gas leasing in the NPR-A did not focus solely on minimizing the total number of

acres offered, although that was a factor. That approach likely would have resulted in holding a lease sale in the highest prospect oil and gas zone, which might have involved less overall acreage but undoubtedly would have consisted of the northernmost part of the planning area, which is also the most critical habitat for important subsistence resources.

The BLM's approach was to balance the need to make sufficient lands available for leasing to achieve an economically feasible lease program while placing off limits or restricting development activities on the lands that are most important for subsistence resources and uses. As described under (A), above, the Preferred Alternative accomplished this balance by excluding the most sensitive fish and wildlife habitat areas from leasing and protecting subsistence uses through surface occupancy restrictions such as setbacks, prohibitions on the types of surface activities, and stipulations to protect important subsistence use areas on lakes and rivers and near existing subsistence camps and cabins.

The BLM has determined that the careful balance reflected in the Preferred Alternative involves the minimal amount of public lands necessary to accomplish the purposes of the IAP. The BLM has made available the minimum lands it has determined are necessary to carry out its leasing program while still excluding or restricting oil and gas activities in the areas most important for subsistence resources and uses.

C. ***Reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.*** When BLM began its NEPA scoping process for this IAP/EIS, it internally identified subsistence as one of the major issues that the IAP must address. The results of initial public scoping meetings in the villages of the North Slope supported this conclusion, and BLM held a public workshop in Barrow to further identify subsistence concerns and to seek ideas from subsistence users about how to address these concerns. Many of the ideas discussed at the workshop are included in the Preferred Alternative, most notably the Subsistence Advisory Panel, whose purpose is to ensure subsistence users a consultative role in all stages of oil and gas development.

The BLM also took in consideration comments from the villages and individuals of the North Slope on the draft IAP/EIS in developing its Preferred Alternative by protecting key subsistence resources. The Preferred Alternative protects the caribou calving areas by not allowing or severely restricting oil and gas surface occupancy in a great majority of the area near Teshekpuk Lake. It also maximizes protection for molting geese by making virtually all of the most important molting habitat unavailable for leasing. A 589,000-acre area north and east of and including much of Teshekpuk Lake would not be available for leasing. In areas that are available for leasing, stringent protective measures that include seasonal restrictions and setbacks forbidding most types of surface use to protect subsistence resources would be in place. Such areas include Fish and Judy Creeks and the Colville, Kikiakrorak, Kogosukruk, Ikpikpuk, and Miguakiak Rivers, which are especially important subsistence locales. In the Teshekpuk Lake Special Area, which is important to caribou and waterfowl, no permanent oil and gas occupancy would be allowed. No seasonal exploratory or delineation wells would be allowed.

On the Colville River, BLM would develop a river management plan in cooperation with adjacent landowners to protect subsistence resources and their uses. The most important part of the river for subsistence uses will receive special attention during the consultation process between BLM and its Subsistence Advisory Panel.

No permanent oil and gas surface occupancy would be allowed in the lake bed of fish-bearing lakes in the deep lakes area.

The BLM has also developed several key stipulations that are intended to address subsistence user concerns about access to hunting and fishing areas and protection of cabins (using protective buffers) used for subsistence purposes. Stipulations are included to ensure that oil and gas personnel are sensitive to local concerns about subsistence and other cultural matters.

Given all of these steps and others discussed in detail above and in Section II of the IAP/EIS that have been or will be taken during the life of the IAP, BLM has determined that the Preferred Alternative includes all reasonable steps to minimize adverse impacts on subsistence uses and resources.

APPENDIX E

Proceedings of the Teshekpuk Lake Area Caribou/Waterfowl Impacts Analysis Workshop

PROCEEDINGS OF THE TESHEKPUK LAKE AREA CARIBOU/WATERFOWL IMPACTS ANALYSIS WORKSHOP

MAY 21–22, 1997
FAIRBANKS, ALASKA

Edited by
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Introduction

Purpose

The Bureau of Land Management held the Teshekpuk Lake Area Impacts Analysis Workshop on May 21 and 22, 1997, to provide BLM with guidance for developing a package of stipulations for an environmental impact statement alternative that would allow oil and gas leasing in the Teshekpuk Lake area (Figure 1). BLM wanted the invited panelists to identify the conditions under which development could be allowed "in a manner which will assure the maximum protection of such surface values to the extent consistent with the [Naval Petroleum Reserves Production Act of 1976]." There were two constraints on discussion at this meeting: the results must allow economically viable oil development, but with protection for caribou and waterfowl.

Scope

- Review options for "reduced-impact oil fields."
- Review existing information pertaining to the response of waterfowl and caribou to oil and gas development.
- Formulate a realistic development alternative that minimizes impacts to waterfowl and caribou.
- Evaluate the likely residual impacts to waterfowl and caribou, under the alternative formulated above.

Format

The workshop had facilitators to help meet the goals in the short time allowed. The panels consisted of agency representatives with knowledge in waterfowl or caribou biology, wildlife interactions with North Slope oil and gas activities, or oil field development. Panel members reviewed relevant studies prior to the workshop. Representatives from the oil and gas industry, as well as invited nonagency biologists, provided background information in an initial information-gathering phase.

The second phase of the workshop was limited to agency personnel, indicated as panelists in the list on page 6. In addition to the invited workshop participants, a letter was sent to various organizations with relevant interests. The letter requested information addressing the questions in Appendix A, or information related to wildlife interactions with North Slope oil developments that would be pertinent to the development of mitigation measures. No responses were received. The draft proceedings of the workshop were distributed to panelists for review. This final edition of the proceedings will be included in BLM's administrative record.

Agenda

May 21:

I. *Overview of Caribou and Waterfowl Use of Teshekpuk Lake Area*
Two brief presentations

II. *Explore Options for Reduced-impact Oil Fields*
Presentation by industry representatives (ARCO), addressing topics such as minimally-staffed oil fields, remote control of production facilities, buried vs. above-ground pipelines, roadless oil fields, minimal air traffic, etc. Discuss advantages and disadvantages of various development options.

III. *Apply the Prudhoe Bay Experience to the Teshekpuk Lake Area*
Waterfowl and caribou panels meet separately. Invited biologists assist in interpreting recent work on disturbance of birds and caribou, and studies emanating from the existing North Slope oil fields. The goal is to define the extent to which studies in the existing oil fields can be used as a model for Teshekpuk Lake.

May 22 (panelists only):

IV. *Formulate Stipulations for Teshekpuk Lake Area*
Waterfowl and caribou panels meet separately. Based on the development options presented earlier, panelists formulate a set of conditions on oil field construction and operations that would maximize protection of waterfowl and caribou, without precluding oil and gas development.

V. *Synthesis*
Waterfowl and caribou panels meet together to identify conflicts between their respective mitigation plans. Panelists attempt to formulate a unified approach to mitigation for both waterfowl and caribou. Residual impacts and environmental risks of the mitigation plan(s) are assessed.

(Note: The workgroup was not completely successful in accomplishing all of this aggressive agenda during the two days allowed. Follow-up

meetings involving a subset of attendees were needed on May 28 and June 2 to flesh out one of the waterfowl stipulations and to merge the two sets of stipulations.)

Attendees

Dave Yokel, BLM (workshop organizer, caribou panelist)
Herb Brownell, BLM (facilitator)
Susan Will, BLM (facilitator)
Ryan Lance, ARCO (invited speaker)
Mike Joyce, ARCO (invited speaker)
Sharon Wilson, BLM (notetaker)
Sue Mitchell, Inkworks (notetaker)
Philip Martin, USFWS (waterfowl panelist)
Joel Hubbard, MMS (waterfowl panelist)
Anne Morkill, BLM (waterfowl panelist)
Tom Rothe, ADF&G (waterfowl panelist)
Geoff Carroll, ADF&G (caribou panelist)
Dick Shideler, ADF&G (caribou panelist)
Brian Lawhead, ABR (invited biologist, caribou)
Brad Griffith, USGS-BRD (caribou panelist)
Alan Brackney, USFWS (waterfowl panelist)
Karen Bollinger, USGS-BRD (speaker, waterfowl)
Gene Terland, BLM (observer)
Jim Ducker, BLM (observer)
Curt Wilson, BLM (observer)
Mike Kunz, BLM (observer)
Johanna Munson, State of AK (observer)
Mark Myers, ADNR (petroleum development specialist, waterfowl panelist)
Joseph Dygas, BLM (petroleum development specialist, caribou panelist)
Jim Craig, MMS (petroleum development specialist, waterfowl panelist)
Dick Roberts, MMS (observer)
Don Hansen, MMS (caribou panelist)
Marie Crosley, ADNR (observer)
Dick Mylius, ADNR (observer)
Pam Rogers, ADNR (observer)
Bill Van Dyke, ADNR (petroleum development specialist, caribou panelist)
Declan Troy, TERA (invited biologist, waterfowl)
Steve Murphy, ABR (invited biologist, waterfowl)
Craig George, NSB (caribou panelist)
Ken Whitten, ADF&G (caribou panelist)
Jack Winters, ADF&G (waterfowl panelist)
Phyllis Casey, MMS (observer)
Frank Wendling, MMS (waterfowl panelist)
Roger Siglin, Northern Alaska Environmental Center (observer)
Robert Suydam, NSB (waterfowl panelist)
Eric Taylor, UAF (invited biologist, waterfowl)

Preliminary Information

Overview of Caribou Use

Ken Whitten of ADF&G presented information on caribou in the Teshekpuk Lake and Prudhoe Bay areas. A herd is defined as having a consistent calving area, and the Teshekpuk Lake Herd (TLH) is more consistent than others. When first recognized as a distinct herd, it was estimated at 4,000 to 6,000 animals and was 25,000 at last count. There is a fairly high level of harvest.

As regards potential development in the area, the only herd for which we have data is the Central Arctic Herd (CAH). Its population was similar to the TLH when oil was discovered. It increased rapidly to a peak of 23,000 in 1992, but in contrast to the TLH, it declined to 18,000 by 1995. The first signs of impacts from earliest construction were that few cows with young calves were spending any time next to roads. The CAH calving grounds, between the Colville and Canning Rivers, are spread out over a greater area than the calving grounds of the TLH.

There are two separate calving concentration areas: one at Kuparuk and Milne Point, and one at Canning River. The road to Milne Point went through the western calving area. Cows avoided the road by one to three miles. As development increased and there were more facilities, there was less use of the area for calving and calving cows moved south and west. Midsummer movements through the area persisted, but caribou have not passed freely. Collared caribou from the western area were in worse physical condition in fall than those from where there was no development. All decline in population has taken place in the portion of the CAH from the developed, western area. In summary, there is no proof of oil field impacts on herd productivity, but there is at least reason for concern. Many of the Prudhoe Bay/Kuparuk developments were designed 15-25 years ago; future development may not be the same. But there is a correlation between the extent of surface structures and caribou activities.

Overview of Waterfowl Use

Karen Bollinger of USGS-BRD presented data on molting geese in the Teshekpuk Lake Special Area (Appendix B). The survey area encompassed

199 lakes and Smith Bay, with data for 15 years from 1982 to 1996. Total number of geese varied from 19,000 to 68,000 with an average of 38,000. Molting geese are few in number outside the survey area. The four species present are Canada goose, Pacific black brant, white-fronted goose and snow goose. The total number of all geese using the area over 15 years indicates an increasing trend, primarily due to an increase in white-fronted geese. Of the total Pacific black brant population worldwide, up to 22 percent molt in this area. Snow geese are few, usually less than 500. On average, brant comprise about 46 percent, Canada geese 34 percent and white-fronted geese 19 percent of the molting geese in the area. There are a few breeders, but most are either failed breeders or nonbreeders.

All species use the area northeast of Teshekpuk Lake, with Canada geese and brant sharing several of their highest-use lakes. Brant tend to occur in larger flocks on fewer lakes. Variation is high among years, and the survey is only conducted on one day each July during the peak of molt for all species. On average, eight lakes support 50 percent of the brant; one lake is used by over 3,000. The molt period lasts for about a month and then goose distribution changes. Geese tend to move to coastal areas before leaving the Teshekpuk Lake area entirely.

Brant are an international concern and this area is of high international importance. Birds molting in the Teshekpuk Lake area come from Russia, Alaska and Canada, and winter in Mexico. This area is unique on the North Slope, having large lakes with adjacent meadows, escape cover, and good forage availability.

Oilfield Design Options and Wildlife Mitigation

Mike Joyce, an ARCO biologist, and Ryan Lance, an ARCO engineer, provided their perspective of what practices might be used to protect wildlife while still allowing development.

The greatest problem for caribou is stress from traffic, which has caused all the changes in CAH distribution. This can be mitigated when designing the layout of an oil field and by monitoring caribou movement and stopping traffic when caribou are near the road and about to cross. An oil field in NPR-A would not be the size of Kuparuk and they expect this should work, although there are no data to test this mitigation.

During the three-week calving season, there is avoidance of roads with traffic. Some calving still occurs in the Kuparuk oil field, but the bulk of calving has shifted to the south and west. Following calving, caribou are present on the coastal plain during the insect season. Before there were gravel pads, caribou went to river bars to avoid insects; now they use the gravel pads. Caribou are not bothered by the presence of a drill rig, the gravel pads, or the pipe. If pipes are built a minimum of five feet above ground and separated from roads, they aren't a problem for caribou during insect season.

The current assumption is that sales-oil pipelines from NPR-A would not have associated roads, but this would have to be decided on a case-by-case basis. Prudhoe and Kuparuk are giant oil fields; there's less than a one percent chance of finding one of that size in northeastern NPR-A. Eventually there could be a threshold number or size of oil fields when roads to the oilfields are less disturbance than the alternatives. In the short term, it is believed roads won't be needed. Rather than using surface vehicles, pipeline spill monitoring can be done daily using forward-looking radar (FLR) from airplanes and detection systems on the line. The FLR can operate from any altitude, if there are no clouds. One trade-off of having no road is that a large-aircraft runway is required in case of a well blow-out. A jet operation would not be necessary, but for oil spill response the capability to land a Herc is required.

Another trade-off is that more space is needed to store equipment that can be brought in only during the winter. Finally, oil field crews change at least once a week. Between that and air transport of supplies, maybe one flight a day would be needed.

For birds, the problem is noise and commotion, which can also be mitigated. ARCO monitors tundra swan nests, which are a prime indicator for long-term information because swans are most sensitive to noise and commotion. Swan numbers have risen rather dramatically in the last three to five years and nesting densities are comparable to historical levels. ARCO has classified habitat into 21 types, and with Geographical Information System software they can better estimate where birds may concentrate during seasonal events and therefore where facilities should be sited to minimize noise and commotion.

ARCO has also been conducting site rehabilitation experiments. NPR-A doesn't have the quality of gravel as found in Prudhoe/Kuparuk; the grain size is smaller. Even thick gravel fill can be rehabilitated if moisture and nutrient cycles are properly addressed. The effects of seeding and fertilizing last only two to three years. With the

addition of topsoil and grasses a long-term, sustained vegetative cover can be produced. However, it's a monoculture and slows down the invasion of natural pioneer species. There is a benefit in not developing a monoculture; ARCO has gone to seeding with partial application rates and transplant plugs or seed from natural plants. This provides a more rapid progression to the diverse vegetative community desired.

Collection and disposal of food waste in a way that attracts predators to camp locations can also stress bird nesting activity. Trash is currently placed in dumpsters, transported to landfills, or incinerated. This provides access to food by predators. There are pilot studies on composting at the mess hall in self-enclosed vessels. Composting may be the norm at future camps that will be smaller—50 to 100 people as opposed to thousands at Kuparuk.

(The remaining discussion was directed to questions in Appendix A that had not already been addressed.)

In regard to the question of oil field design and what level of on-site processing would be needed, the size of the oil field at Prudhoe requires six dedicated processing facilities. The Alpine oil field, which is more representative of the potential opportunities in NPR-A, has these same functions and everything else on two pads. Pads in NPR-A would average 8-10 acres each. Considering the tradeoffs, it's best to keep processing close to the wells because multiphase lines have a higher probability of spill.

It is hard to predict what type of oil field support infrastructure would be required in NPR-A. It can probably be done a lot more efficiently than Deadhorse. As much as it can, ARCO would try to avoid another Deadhorse in NPR-A.

Two to three years before starting up oil field development there would be a lot of activity that usually occurs during winter. One option for access is building a dock into the Beaufort Sea and barging equipment from Prudhoe or Kuparuk, but tradeoffs exist. Is a dock better than a seasonal ice road? Are year-round ice pads possible? If so, how much refrigeration is required? Is there another set of environmental problems?

How different drainages would be crossed depends on their characteristics. ARCO will try to cross the Colville by drilling underneath. They contemplate trenching in other places, but not in the Colville. Each drainage has its own set of considerations.

How feasible is horizontal directional drilling? There is a distinction between horizontal drilling and extended-reach drilling. Each is feasible given the right situation. Alpine would have required three or four drill sites in the past; now extended reach drilling will require only two sites. The current record is a reach-to-depth ratio of 4:1. The shallower the oil, the less the reach.

Is an oil field without roads connecting pads feasible? It's technically feasible but not an appropriate tradeoff due to the increased need for local air traffic. With roads, helicopters would be needed only for spill response.

The tradeoff in elevating pipeline eight feet vs. five feet is more expense. Different equipment is needed for construction after about six feet. The extra three feet makes a significant difference in the equipment needed, and thus in costs, but it doesn't make a big difference to caribou. The terrain goes up and down but the pipeline doesn't since rapid topographical changes in the pipe are undesirable, so over 60 percent of the line is well above five feet above the terrain.

Buried pipelines may be feasible and cost-effective, but burial clearly disrupts the tundra. Also, future needs may change, causing the need to dig up and rebury. But foremost is the concern for thaw and freeze of permafrost. Crude oil is hot, and you have to insulate heavily or place the pipe in thaw-stable rock. Pipe can be buried in the road, but it's very expensive and bad from a spill and leak perspective. Also culvert drainage is a difficulty.

Existing DEW-line sites would be given priority for new facilities if they're properly located. However, there is a technical limit to reaching the oil reservoir with the drill.

In general, ARCO wouldn't allow public access to oilfield facilities, but would allow Native subsistence access.

On the question of whether industry would consider sharing seismic data, from ARCO's perspective that would be a big hurdle. Those data are considered a key competitive aspect of the business.

In terms of levels of operations, Alpine will be radically different from Kuparuk; it will have only minimal staff. The technology is not quite there yet to have unmanned sites. Starting in 1998 at Alpine, there will be a lot of activity for two years in winter, with hundreds of people needed then. There would be no impact on animals living there in summer except for drilling. Normal operating mode would need 20 to 40 people.

The economics of completely stopping operations for two to three months are prohibitive in these small fields. A drill rig is not conducive to shutting down in mid-well, nor would it be economic to plan the drilling schedule to stop drilling for two months. There's more to it than just shutting down for two months and not getting two wells drilled. It's dependent on the need to keep the reservoir in balance. Recovery from the field as a whole could be reduced. The optimum would be continuous drilling activity for four or more years. During critical time periods ARCO can try to reduce the number of people. However, ongoing operations are different. If ARCO can figure out how to run with five people rather than 25, it will.

In summary: 1) Complete shut down for the caribou/goose critical period is not economical. People will be present at all times, with a daily commute if their worksite is on a different pad than the camp. 2) remote operation is not yet technically feasible but has potential for the future. 3) It is not economically feasible to suspend drilling during that period, but minimal staffing and reduced access can be accomplished.

Proceedings of the Waterfowl Group

Review of Current Knowledge

Molting geese are flightless and more sensitive to disturbance than during other periods. The Teshekpuk Lake area has been traditionally used by molting and breeding geese for thousands of years (Figure 2). The primary needs of molting geese there are protection from disturbance, available and adequate food supply within close proximity to escape habitat, low predator density, and escape habitat (open water, ice floes). Factors that cause disturbance of waterfowl are predators (including foxes), aircraft overflights, humans on foot, vehicle traffic, noise and commotion. Factors that may affect the availability of an adequate food supply are changing water levels in lakes, developments which restrict goose access to food, habitat loss, contaminants, previous grazing by geese or caribou, nutrient cycling, weather, and overpopulation from lack of predation. Factors that limit escape habitat are weather (influence on ice), topography, hydrology, habitat loss, lake levels (thaw cycle, drainage, modified hydrology, etc.), disturbance, access/proximity (escape has to be near to feeding areas), channelization or drainage patterns (connection of lakes to each other), size of habitat unit, and proximity of lakes to each other. Predator populations are affected by availability of lemmings and other alternative prey species, garbage, supplemental food, human harvest, artificial nesting habitats, number of geese, and disease. Traditional use of lakes by geese may be influenced by habitat modification, population size, frequency of disturbance, and distribution changes.

There are not enough data to say definitively which of the above factors is a higher priority for molting geese, or how some may be related to oil field development. The Prudhoe Bay studies funded by ARCO provided data on 400 to 500 birds, but these may not apply to the thousands of birds at Teshekpuk. A couple of studies have indicated that land traffic per se was not a problem, but people on foot frighten the geese quite a bit. In two brood-rearing areas, one near high traffic and one near low traffic, the high-traffic-area geese reacted less, perhaps suggesting habituation to consistent traffic over time. It may be safe to assume that humans on foot and helicopter traffic are the two most disruptive of anthropogenic factors to molting geese.

Culverts may be a high priority problem, if they cause flooding of an entire goose colony. Indirect effects such as hunter access can be much greater than direct effects, to which birds can habituate. Birds become more wary during nesting. During fall staging for migration, distribution is more related to food than to disturbance.

During work on four species of geese, Steve Murphy ranked disturbance using three criteria: severity of reaction, duration of response, and distance moved. Over five years, he looked at humans on foot, nonpredators, avian predators, ground predators (fox), and aircraft. He investigated the distance at which disturbance seems to drop off. Failed breeders and nonbreeders may respond differently, for example, nonbreeders may spend more energy to get away because they're not tied down by a brood.

Studies by Eric Taylor looked at changes in brant body mass, protein levels, and lipid levels from arrival to departure on the molting grounds. There was a significant protein deficit and decrease in lipids. Brant may select the Teshekpuk area as much for lack of disturbance as for available nutrition. In fact, the nutrition available may not be optimum. Brant molting near Teshekpuk are primarily from the Yukon-Kuskokwim Delta. Almost all lipids are lost during the molt period, down to about two percent.

The geese also incur a protein deficit during that time.

Would geese from the Yukon-Kuskokwim Delta react differently than birds born and raised at Prudhoe, where there's already disturbance? Geese react strongly to any disturbance, and there may be a critical time while choosing a place to molt when disturbance will cause geese to move elsewhere.

Some restrictions could be placed on oilfield work during summer to reduce pressure on geese while still allowing development to proceed. If ground access was by ice road only, large materials would not be hauled in during the summer, nor would they be flown in by large planes during the sensitive period (mid-June through August). Modules could be flanged up during summer, but all basic construction would take place in winter. If surveyors on foot cause problems to molting geese, they could survey during early spring or late summer to avoid the molting period.

If drilling would be continuous for a few years, there would have to be some transport of people during summer. ARCO accepts access restrictions for large noisy planes and pre-stages heavy equipment and materials before the sensitive period. Air traffic can't be stopped completely, but the number of times a small, relatively quiet plane goes in during the sensitive period may be restricted to perhaps three to four times a week at Alpine. Also, if there is an airstrip, there would be no need for helicopters other than in emergencies. Fixed-wing aircraft are less of a disturbance than helicopters. Also, the frequency of disturbance is important. Taylor's study suggests that the geese have little energetic margin.

Perhaps a "no development" buffer of one to two kilometers could be established around each of the high-use lakes, unless overlapping buffers would preclude development entirely in some areas. If so, perhaps development in those places could be limited to low-disturbance activities. Drilling from outside buffers could possibly reach out 15,000 feet and effectively tap reservoirs. The presence of a cross-country pipeline with no road shouldn't stress birds, so pipelines needn't be excluded from buffer areas.

Development of Stipulations

A draft set of stipulations was introduced to the panel for discussion. The stipulations were based on the following assumptions:

- Geese habituate fairly well to structures.
- Disturbance due to vehicle traffic is mild beyond 200 feet.
- Chronic disturbance due to aircraft is very detrimental and the altitude required to mitigate it is unreasonable given local weather conditions, so the focus should be on limiting frequency and establishing routes of travel.
- Humans on foot are the most disturbing factor.
- Permanent roads that allow access would have detrimental effects in the long term.

Preliminary Ideas Presented for Discussion:

1. Restriction on density of production pads: one per township.
2. No habitat alteration permitted in goose feeding areas.
3. Interfield roads permitted but no road connection to outside road network.
4. Gravel fill for roads would be removed upon completion.
5. All facilities located a minimum of 400 meters from documented-use lakes, as far as possible away, and 2,000 meters from highest-use lakes (use averaged over 15 years).
6. Cross-drainage structures will be sited and maintained so as to prevent impoundment or alteration of hydrology.
7. Material sites not permitted within the molting area.
8. Processing sites shall be preferentially located outside the goose molting area, providing that the multiphase pipeline does not exceed *x* miles. Alternatively, processing facilities shall be located to maximize the distance from the critical lakes.
9. Processing facilities shall not be sited closer than 2*x* to each other.
10. Facility layout shall give maximum consideration to shielding human activity from view of the closest goose molting lake.

Seasonal restrictions on activities, June 15 to August 30:

11. Helicopter overflights shall be suspended.
12. Routine fixed-wing flights limited to two flights/week.
13. Flight corridors established for designated routes that minimize disturbance to molting geese (generally 3 km lateral from high-use lakes). Use of corridors mandatory, except in emergency.
14. Off-pad activity shall be prohibited except in emergencies.
15. Construction activities suspended.
16. Road traffic minimized. Transportation of

personnel between camps/pad facilities limited to coincide with shift changes. Nonessential operations requiring vehicles other than passenger vehicles shall be suspended.

17. Public access to oil field facilities shall be restricted.

The details of #5 need further work in regard to the width of buffers and the number of lakes to which #5 should apply. Goose feeding areas are typically to the east and west of the lakes, not north and south, so buffers could be adjusted accordingly. It may be difficult to justify the buffer width using only the studies done at Prudhoe. The question remains as to whether those studies apply to the Teshekpuk area, which is unique on the North Slope and may need greater restrictions. However, with the high lake density of the area, larger buffers would effectively eliminate oil development, thus violating one condition of the workshop discussion. The details on buffers (where and how wide) were postponed for the time being.

The use of surface water for oil field development and operation could result in excessive draw-down of lakes. This may result in only a few inches change in the water level, but that change could affect preferred goose feeding areas (Figure 3) along lake margins. These are very flat areas barely above current lake level. A small change in water level could alter the vegetation community present. Also, the activity associated with water removal could disturb geese. For both of these reasons the restriction of surface water extraction would be necessary.

Restrictions on waste disposal should also be implemented. Putrescible garbage needs to be handled and disposed of so that it will not be available to predators. Disposal is not the problem, handling is. Although this is covered under state law, current facilities are not succeeding in this arena. Also, feeding of most wildlife is prohibited by state law but is not adequately enforced. In addition to current law, the feeding of gulls and ravens should be prohibited. Finally, proper planning and training for oil field workers are crucial for avoiding increases in the predator populations.

Fuel storage stipulations would also be helpful. The lakes are in basins, so spilled fuel could drain into the lakes from a long distance. Storage of fuels and all hazardous materials should be restricted to gravel pads. However, fuel is also needed before pads are built. Existing regulations will have to be sufficient in this case.

Increased access because of roads could pose a serious threat to molting geese. Currently, public access is extremely limited and it is important that it remains so. However, regulation of human access on public lands is difficult. Title VIII of the Alaska National Interest Lands Conservation Act doesn't allow anything to occur on federal land that limits subsistence access, unless there is a finding of a significant impact on subsistence and there are public hearings. Ice roads would not be part of this problem, since they do not persist long enough in the spring to provide people with access to molting geese. Gravel roads connected to the highway network or local villages would present a problem. The goal should be to do nothing that would provide increased opportunity for access.

A process must be established to manage subsistence access. A greater effort to work with subsistence users and address these issues would help. Such a process needs to involve the North Slope Borough and local residents. Another facet of this effort might be to have a state and federal monitoring body that would implement studies, conduct integrated planning, find permitting solutions, and promote interagency relationships. This issue of subsistence access would not be appropriate as a stipulation on oil companies.

Closer monitoring of molting goose populations before, during and after development would help measure any impacts and the success of mitigation. Flights once a week to survey goose distribution would not negatively impact the geese, but would provide data on the pattern of their movements.

The draft restriction on the density of production pads to one per township may be unreasonable from a development standpoint because it isn't possible to reach a whole township from one pad if the oil field is shallow. Would it be better to have one large site or 10 smaller ones? This would be a moot point if there were appropriate buffers that would restrict development to areas where it doesn't impact geese.

No habitat alteration should be permitted in preferred goose feeding areas (Figure 3), which are moss/sedge meadows adjacent to lakes. This type of activity would also be precluded by buffers. Is it better to build ice roads over tundra and avoid the lakes? Meadow habitat is only two to three inches above the lake; is it more sensitive to ice roads? These meadow habitats can be mapped and then stipulations worded so there is no net loss of high-value foraging habitat. Perhaps all exploration and

development activities should be prohibited in preferred brant feeding areas.

Gravel intrafield roads should not connect to road networks outside the goose molting area, and gravel fill should be removed, or roads otherwise made unusable, after the life of the field. It isn't enough to avoid connection to existing roads east of the Colville River, since Nuiqsut is west of the Colville. There is concern about future roads, public access and disturbance of molting geese. The general concept is to limit access and consolidate nodes of activity. Road networks should be reduced in size and consolidated as much as possible. It would be preferable to have no roads between oil fields, but only necessary roads within each developed field. Processing and other facilities could contribute directly to goose disturbance as well as to the complexity of the road network, so they should also be consolidated.

Impoundment or alteration of the hydrologic regime could negatively impact both foraging and escape habitats. Cross-drainage structures must be sited and maintained to prevent negative impacts, and properly abandoned once the gravel pad is no longer needed.

Material sites could have adverse impacts on geese both through habitat alteration and disturbance. They should not be permitted within buffer areas, and their operation may be restricted when molting geese are in the area.

Since humans on foot may represent one of the greatest disturbances to molting geese, facility layout must incorporate features that shield human activity from view of the closest goose molting lakes. Fencing on the appropriate sides of gravel pads may meet this need.

Many activities should be restricted while molting geese are present to reduce the disturbance of geese. A decision on the dates of seasonal restrictions was postponed. Helicopters are one of the greatest disturbances to molting geese. Since it has already been established that helicopters are not essential where fixed-wing access exists, helicopter flights should be prohibited seasonally except in emergency.

Off-pad activity could be highly disturbing and should be kept to a minimum. This requirement would be for lease holders only and couldn't be applied to the general public. Since monitoring the geese and other studies would be necessary throughout development and operations, and lessees might be involved, consultation with agencies could be used to determine when these activities would be appropriate. In addition to such studies, off-pad activity during the sensitive period would be allowed in case of emergency.

Construction activities within the seasonal limit could also cause an unacceptable disturbance, but it would depend on the particular job to be done. Therefore construction activities during the goose molt would have to be decided on a case-by-case basis through consultation with agencies.

Road traffic could be reduced during the goose molt by limiting transportation of personnel to coincide with shift changes and suspending nonessential operations requiring vehicles other than passenger vehicles. The reduction of traffic to a very low level could allow for narrower buffers of no roads around lakes.

Draft Stipulations: Waterfowl

1. Exploration and development activities will avoid critical feeding habitat types unless otherwise accepted in consultation with BLM, FWS, NSB, and ADFG.
2. Restrict access via roads or infrastructure by public into molting area.
3. Restrict/minimize/consolidate roads and facilities to the extent possible. Intrafield roads only are preferable. We don't want roads all over the molting area.
4. Road gravel fill removed upon oil field abandonment so that roads are made unusable.
5. Buffers will be added to protect goose molting area.
6. Cross-drainage structures will be sited and maintained and properly abandoned so as to prevent impoundment or alteration of hydrology.
7. Material sites are subject to buffers and seasonal restrictions.
8. Restrict water extraction from lakes used by molting geese.
9. Facility layout shall incorporate features that screen/shield human activity from view of the closest goose molting lake.
10. Putrescible garbage needs to be handled/disposed of such that predators will not have access. Plan so that waste production is minimized.
11. Feeding of any wildlife prohibited.
12. Restrict hazardous materials to existing pads. Standard fuel storage stipulations. See existing regulations.

Seasonal stipulations, about June 15 to August 20 or 30; dates to be determined:

13. Aircraft access minimized. Helicopter overflights suspended except in emergency. Routine fixed-wing flights limited to two round-trip flights per week. Flight corridors established; designated routes that minimize disturbance to waterfowl. Generally 3 km lateral from high-use areas. Use of corridors mandatory except in emergency.
14. Off-pad activity shall be prohibited except in emergencies unless otherwise accepted in consultation with BLM, FWS, NSB, and ADFG.
15. Construction activities suspended unless otherwise accepted in consultation with BLM, FWS, NSB, and ADFG.
16. Road traffic minimized. Transportation of personnel between camps/pad facilities limited to coincide with shift changes. Nonessential operations requiring vehicles other than passenger vehicles shall be suspended.
17. Public access via and use of oil field facilities shall be restricted.

Recommendations

1. Subsistence—process needs to be set up to manage this.
2. Enforcement?
3. Monitoring program on effects of oil development on molting geese, both pre and post. Integrated monitoring team needs to be explored.

Proceedings of the Caribou Panel

Review of Current Knowledge

Importance of the Teshekpuk Lake area to caribou:

The Teshekpuk Lake area (Figure 4) may be important to caribou as a calving ground because of fewer predators, habitat (more micro-relief where snow blows away in winter and provides for certain plant/habitat types and wider feeding options), less human disturbance, and traditional use by the herd. Overall, though, we have little information on the factors that provide good calving habitat.

It is important as a summer use area, including for insect relief and forage, due to its prevailing winds, proximity to the coast and river deltas (more wind, cooler temperatures and later emergence of insects), and for its adequate forage close to insect relief habitat. Caribou need to eat during those portions of the day when insect harassment is not so intense. The TLH ranges primarily within 30 km of the coast when insects are bad. The expenditure of energy to get away from insects, the intake of energy from browsing, and the energy expended traveling to different areas for food are important criteria in defining good insect relief habitat. No portion of the coastal area is known to be used more than others for insect relief. The caribou seem to move northward and westward when insects are bad. As for criteria of good calving habitat, we don't have adequate data on summer forage requirements and availability.

This area is also used year-round by the TLH, in contrast to the Central Arctic Herd, which uses the Kuparuk/Prudhoe area in summer only. Winter use is variable, involving 10 to 100 percent of the herd. There has been a fair amount of winter use between Teshekpuk Lake and Fish Creek, even during severe winter range conditions, which are early winter rains and heavy snow. Caribou that winter in the area get fewer lichens and more sedges in their diet during winter than some other herds in Alaska. The TLH may not be as dependent on lichen forage as other herds, because they have other options.

Recent data show that part of the TLH migrates south of the Brooks Range, but many are still using the Teshekpuk area during the winter. During the late 1970s and early 1980s, it seemed that almost all of TLH wintered in this northern area. However, they didn't have satellite collars then, so we may have had a biased view. Since winter distribution varies, there may be confusion in the future between oil industry effects and weather effects on winter migration.

Another benefit of the Teshekpuk area is the presence of relatively few predators. The prey base is not consistent enough to keep predators in the area year-round. Caribou migratory behavior is erratic and if caribou are not in the area there is nothing else for predators to eat. There may also be more hunting of predators by humans in the Teshekpuk Lake area. Wolves may move into the area temporarily, but they probably do not remain there long-term.

The TLH is the most important caribou herd for local resident hunters. People from Barrow, Wainwright, Nuiqsut, Atqasuk and to a lesser extent Point Lay and Anaktuvuk Pass use these animals. Hunting takes place wherever the people and caribou co-occur. Nuiqsut's use of the TLH is increasing due to summer herd distribution and winter snowmachine travel. As the herd is expanding farther west, Atqasuk is also using it more. Up to 10 percent of the herd is harvested annually for subsistence. Accessibility of the TLH could go up with improved

access from oil field activity. Alternatively, it could decrease if developments form a barrier to travel. It is difficult to cross gravel roads with a loaded sledge behind a snowmobile. There are also social barriers: residents don't like oil companies telling them they can't hunt. There are no regulations against hunting around the Kuparuk oil field. At the Alpine field, Nuiqsut and ARCO are negotiating subsistence hunting rules. The Teshekpuk area represents easier access to hunting than the Kuparuk development.

Potential adverse impacts to caribou and habitat:

Impacts on the calving ground could include the actual loss of habitat, the functional loss of calving habitat due to caribou avoiding activity (humans, traffic, etc.), increased predation due to developments attracting predators, and more human disturbance. Within the calving area higher ground is preferred both by caribou and development, so there is a greater potential for affecting habitat. The network effect of development pads near to one another can cause avoidance of an even larger area. The result may be over-crowding on the remaining used habitat. Lastly, aircraft traffic can disturb parturient cows or cows with calves.

Development in the summer use area could impede movement along the coast and between foraging and insect relief habitats and interrupt use of insect relief habitat. However, gravel pads could also provide relief from insects. The use of manmade structures by caribou during insect season may or may not result in less efficient feeding. Caribou could also be killed in collisions with vehicles. The cumulativeness of impacts is important; if insect relief and access to forage are affected, there may be a cumulative energetic cost. As more impediments are introduced, the cost may increase to a threshold where productivity and survival are significantly reduced.

Year-round use of the area could also be affected. Disturbance could cause caribou to move around more in winter, increasing energetic costs and possibly functional habitat loss. The degree of separation between pipelines and roads can influence the accumulation of snow in drifts that create barriers to caribou. Roads by themselves can also produce snow drifts. There would be more aircraft disturbance in winter, since more and larger aircraft are used then. Because caribou are there year-round, there is more potential for hunting.

Discussion of impacts and studies from existing developments

Might caribou that see traffic during winter subsequently avoid a road during the calving period, even if traffic is prohibited then? No evidence of behavioral reaction to the roads themselves has been documented. There are cases where studies have shown caribou calving very near gravel pads, but it's a small number of animals. They tend to be in areas where there is much less activity, and relatively near operating drill sites that have very low traffic rates. Disturbance effects have been most noticed in and around major trunk roads with higher traffic rates. In the western part of the Kuparuk field, in an area of very little traffic, one pass of a truck has been sufficient to send cows and calves running pell-mell for a half-mile. So even a little traffic may be enough to elicit that behavioral response. The result is displacement of cows and calves from areas near roads. Mitigation for this has not been tested.

There is no way to avoid the behavioral sensitivity of cows and young calves to activity, so the activity should be constrained or reduced. If the desired condition is to totally avoid behavioral effects along a road, then allow no vehicle traffic during calving season. This extreme case has never been stipulated nor its effects tested. There has been too much resistance by oil field contractors and subcontractors.

How can disturbance be eliminated or reduced in an area? As a partial solution, the BLM could require unitization of fields. In state (Alaska) oil and gas lease sales, consolidation of facilities is one of the stipulations. If NPR-A development goes according to the geological scenario (one-to-a -few small oil fields), one small field could cross boundaries of tracts owned by different bidders. On state land there are companies leasing side by side, and when they unitize the field they choose one company to operate it. Depending on how BLM structures its regulations, it could have the same situation. There could be stipulations to minimize the number of facilities, such as airports.

The major oil fields on the North Slope have all been unitized, but each has been developed separately. There hasn't been a requirement that Prudhoe and Kuparuk be developed as one field. Geologically they are separate. The question becomes: should several oil fields share the same airport and other facilities? If there are dispersed fields without interconnecting roads, it would be difficult to have one airport servicing all fields. If there is no road, an airstrip is needed at least for

emergency response but probably for crew changes and supplies also. But one saltwater treatment plant could serve several fields.

In terms of restricting activity, an oil field can't be shut down during calving. It's not feasible from a safety consideration, if nothing else. Currently, oil companies have a two-weeks-on, two-off work period. Would a six-week period during calving with no crew changes be reasonable? Could there be fewer grocery deliveries and less fresh food to reduce aircraft activity?

This would reduce air traffic only, because people are not going to live at all drill sites. If an oil field requires more than one pad, there has to be traffic. Completely shutting down an oil field is not an option, so neither is having no traffic at all. Perhaps during the six-week calving period traffic could be restricted to convoys at the beginning of each shift change.

How effective might monitoring caribou and controlling traffic be during calving season? There will still be traffic when caribou are not approaching the road, and cows may see the traffic and avoid that area. It might be reasonable mitigation during the summer use/insect relief period, but perhaps not effective during calving season. An option for mitigation during calving is to design an oil field to restrict the area and extent of activity, i.e., minimal number of pads, minimal length of roads, and minimal traffic. But these restrictions would also be tempered by economic concerns. The economics of these smaller fields drives what can be considered in designing them.

During the summer following calving, it would be beneficial to restrict traffic to $\leq$15 vehicles per hour. In the past, minimizing unnecessary traffic has been stipulated but difficult to enforce. In a sensitive area like that around Teshekpuk Lake, where large aggregations of caribou might move through an oil field, caribou monitoring and subsequent traffic control may be a more effective and responsive approach than broad-scale seasonal restrictions. If the general location of caribou is tracked, there will be days when they won't be in an area and gravel hauling or other heavy traffic could be allowed.

A different problem could be hunting from the road. One recommendation stressed by Cronin, et al. (1994), was a strict prohibition on vehicle-based hunting. As soon as caribou associate roads with hunting, they will avoid them. Hunting from the road by oil field employees can be prohibited. That can also be regulated by the Federal Subsistence Board and the Board of Game. The law already prohibits shooting from or along the driveable surface of any road, but all one has to do is literally step off the shoulder, shoot at an angle away from the road, and it's legal. In the Swanson River oil field, USFWS has a hunting stipulation that does not allow people to use vehicles within the field. Hunters can go into the field on foot and hunt but can't take a vehicle. For NPR-A, a recommendation for no hunting could be made to the Board of Game because hunting exacerbates the whole caribou disturbance issue.

The reaction of caribou to pipelines may be influenced by height, number of pipes on a rack, and separation from roads. Five feet between the ground and the bottom of the pipe at vertical support members (VSMs) appears to be a good height for an elevated pipeline. There are places over high terrain where the pipeline would be close to the ground, which may impede caribou movement. However, 60 percent of the Alpine pipeline will be above five feet because of the uneveness of the terrain. There are no data to suggest that caribou benefit from having the pipeline six feet high or higher. On the Endicott development, biologists found no selection for higher pipes by caribou. The frequency of strong reactions by caribou to elevated pipe has decreased over the years. There were some by the CAH early on, so there may be a learning curve for a herd that has never experienced elevated pipeline.

Some question remains about the relative effectiveness of ramps over pipe vs. sections of extra- high pipe (eight feet) in areas identified as crossing locations. The latter has never been tested as an alternative, but there have been several studies of ramps. They have been used more frequently than expected in relation to their availability, but that may be a function of their extremely narrow width. Statistically, almost any use of those ramps, which represent a very small proportion of pipeline length, translates to significantly above-average use. In terms of getting large caribou groups over pipes, the only place where ramps were effective was in the Prudhoe field where some pipelines are much lower than five feet. The general conclusion is that elevated pipeline alone is sufficient without stipulating ramps.

There is less experience with the evaluation of pipeline/road separations. There has been one dedicated study of that, but it was in a year of little mosquito activity so it was less conclusive than desired. Nonetheless, the initial indications were that the separation of pipelines from roads by $\geq$100 meters resulted in significantly more frequent

crossings. This separates two elements of a development corridor (road and pipe) that appear to have synergistic effects.

Another consideration is on which side of the road should a pipeline be placed. In the Kuparak field, when caribou encounter the pipeline first they often hesitate at the pipeline. While hesitating, traffic would come by and cause further delay or deflection.

A study in the Kuparak field in the late 1980s addressed the number of pipes on a rack, separate adjacent sets of pipes on racks, and caribou crossings. Normally, caribou crossing success has been evaluated by looking at whether or not caribou approaching at a certain distance succeeded in getting through to the other side. The Kuparak study involved more behavioral monitoring and group sampling. At one place in Kuparak, there is one rack with several pipes on the south side of a road, another rack with several pipes on the north side of the road, and yet a third rack beside that. There are now caribou trails running parallel under those wide racks of pipes. Ruts are being formed in those shaded areas under the pipes, which provide fly relief habitat. Indications are that it's more difficult for caribou to cross under the pipes from one side to the other, but the data do not test this.

A possible mitigation would be to bury pipes under the roads, which has been done in the Milne Point field. The effects of that on caribou hasn't been studied, but it makes sense from the standpoint of mitigating potential delays or deflections of caribou crossings in corridors where pipe must be adjacent to the road. However, it requires more gravel, a larger area of natural vegetation must be buried, and oil spill detection is more difficult.

The average roadpad thickness is five feet. Would a three-foot roadpad be easier to cross? Sides of roads are ramped; the problem is not the physical barrier, but the visual barrier. Caribou are more apprehensive if the road is the same height as the pipeline and they can't see the other side. It also depends on the visual topography of the area. However, technological constraints may require that five-foot thickness for load-bearing capability. The problem can be partially mitigated by separating pipeline from road.

Layout of the field (whether pipes or roads run north-south or east-west) could also make a difference. Caribou movements show directional trends. Roads and pipe could be oriented in relation to the principal direction of travel by caribou groups moving to and from the coast. In parts of the Endicott corridor, caribou can still reach insect-relief habitat without needing to cross the pipeline. In the Teshekpuk area, caribou movement is much more restricted by the number and distribution of lakes. Except along the coast, movements are mostly north-south and there are caribou trails that seem to be used with great regularity. It would make sense to be aware of that and design any development accordingly. This is especially so between Teshekpuk Lake and the Kogru River, which create a natural funnel the entire herd must go through every year. Here it may be necessary to bury pipelines under roads, or even prohibit all potential barriers to movement in that area. Some lessons on caribou movement have been learned the hard way over the years in the Kuparak field. There, corraling effects of roads and pipelines created some of the worst examples of delayed and deflected movement. Loops, circles and similar designs must be avoided.

In general, mitigation studies have focused most on the insect and calving seasons. The largest concern may be the calving season. But for the Teshekpuk area, on-the-ground studies are needed to see how caribou use the area in all seasons. Such studies could be stipulated in lease agreements.

Development of Stipulations

Because caribou movement along the Beaufort Sea coast is crucial for insect relief, it would be best to establish a zone of no unnecessary permanent surface occupancy (permanent facilities) within two miles of the coastline (Figure 5). A similar stipulation was proposed for the Arctic National Wildlife Refuge during past planning efforts. Some facilities, such as seawater treatment plants, may be necessary in that zone. A needs assessment would have to be done for each proposed facility. During cumulative impacts analyses, future actions such as state offshore lease sales would have to be considered. Since establishment of this zone would push development inland from the coast, would it force development into areas that are even more sensitive? Probably not for caribou, but it may cause conflicts with the needs of molting geese.

The roughly 10-mile-wide strip between Teshekpuk Lake and Harrison Bay, and especially the corridor between the lake and Kogru River, represents an area critical for caribou movement. There are large caribou trails in this area. Another such area lies northwest of the lake, between it and Smith Bay. If oil is discovered in these areas,

development should be designed so it would follow the direction of caribou movement and not impede movement in any of these corridors. Perhaps a general stipulation should be included saying that special requirements and greater scrutiny may be imposed on development in areas critical to caribou movement. Also, some facilities may have to be constructed outside the boundaries of the lease that contains an oil discovery, if a critical movement area is involved.

It is easier at this time to designate townships that encompass these movement areas, rather than trying to identify particular corridors (Figure 5). Six townships cover the majority of the area east of Teshekpuk Lake and one township is sufficient for the corridor northwest of the lake. The BLM can work with industry as they design facilities, but should make it clear up front that there will be tighter restrictions on placement of roads and facilities in those townships. In most of the area east of Teshekpuk Lake, roads should run in a north-south pattern, not east-west. In a smaller zone within those six townships, extending about four miles east from the eastern shore of the lake, there should be no permanent surface occupancy. In any of these critical movement areas pipelines may have to be buried.

To further mitigate impacts in summer use and insect relief areas, any elevated pipeline should be a minimum of five feet high at each VSM, measured between the highest point of ground and the bottom of the pipe. To reduce the number of production pads and the resulting network effect, maximum feasible extended-reach drilling should be used throughout the Teshekpuk area.

Pipelines and roads should be separated to reduce their synergistic effects on caribou movement. The greater the separation, the better it is for the caribou. Benefits of separation begin to show at 300 feet and improve out to 1,000 feet. If a strict minimum is set, The BLM may get into a corner later if the minimum is not feasible. For instance, topography may be a limiting factor.

Which side of the road the pipe is on may also contribute to the success of caribou movement. In some places caribou come from all directions, but in other places there is one direction used more frequently. This may require additional studies. For now it may be adequate to state that pipelines must be placed on the appropriate side of the road.

To reduce the disturbance by vehicular traffic on calving grounds and the summer use area around Teshekpuk Lake, traffic restrictions could include convoys, busing, caribou movement monitoring, and controlling traffic when caribou crossings are imminent.

The design and layout of oil field development should conform to caribou movement patterns to the greatest extent feasible. Planners should consider the orientation of linear corridors when laying out fields to address caribou migration and the potential corralling effect of gravel pad networks, and to avoid loops of road and pipeline that connect facilities. Such design planning would require greater knowledge of caribou movements. Studies may be required, including mapping of caribou use areas.

Just one study would not be sufficient, because caribou may change their movements in reaction to existing structures. As soon as a lessee makes a discovery, they could begin studies. However, the lessee would be designing the field right after discovery, so with this scenario the design would be based on one summer's study at best. Thorough biological studies of caribou movements and use of the area should be conducted immediately after oil and gas leases are awarded and prior to development plan design, to determine how to best locate facilities. The lessees should fund these studies through a joint state/federal/borough oversight committee.

To reduce the total number of gravel pads in a field design, all facilities except airstrips, docks and seawater treatment plants should be located on drill pads. If possible, airstrips should be integrated with roads.

To further reduce disturbance during calving and summer use periods, no seismic activity or exploratory drilling should take place in the Teshekpuk area from May 1 through September 30. Helicopters could also represent a disturbance factor at this time, but there are no data documenting their impact on caribou. Since the waterfowl panel will undoubtedly address this issue, it can be deferred to them. Also discussed but deferred are prohibitions on all construction between May 1 and June 15, and on the construction of permanent roads connecting individual fields to each other or to the road system outside NPR-A.

In small operations, it is likely there would be two or three pads connected, but only one camp. How much traffic is involved with the operation depends on the stage of development. The number of drilling operations drops off as the field matures, but maintenance continues. It would be desirable to have no traffic during calving, but given the economic reality, keeping it to a minimum would be the best

possible action. This could be accomplished in part from May 20 through June 20 by limiting traffic to four convoy round trips per day between facilities. It could be further improved if drilling muds and other major equipment, materials and supplies were moved and stored at work sites at times different than the calving season, i.e. prior to and after May 20 through June 20.

The size and speed of vehicles and the size of dust plumes they produce should also be limited. Speed limits from May 20 through June 20 could be minimized to the point where no dust plumes are produced and caribou behavior is not impacted by the sight of large, speeding objects. Perhaps a convoy could be led by a water truck to hold down dust. However, it would probably be more practical just to require that traffic speed be reduced to 15 mph from May 20 through June 20.

Traffic is not the only disturbance factor that can cause parturient cows or cows with calves to avoid roaded areas. The association of hunters with roads can have the same effect. Hunting by all oil field workers should be prohibited.

Fixed-wing aircraft can also disturb calving caribou. Since Twin Otter aircraft are currently found sufficient for normal operations, it should be required that between May 20 and June 20 the use of aircraft larger than a Twin Otter be for emergency purposes only. Aircraft traffic takeoffs and landings should be limited to an average of one flight a day between May 20 and June 20 at aircraft facilities, except for emergencies.

Caribou calf survival can be affected by oilfield development if predators are attracted to the area. Putrescible waste disposal should be conducted so as to not attract calf predators. Possible methods for implementing this include bear-proof dumpsters, fenced camps, incineration, backhaul, or enclosed compost.

Draft Stipulations: Caribou

1. Any elevated pipeline will be a minimum of five feet high at VSMs, measured at VSM between highest point of ground and bottom of pipe.
2. There will be a potential for ramps, buried pipe, or pipe buried under the road where facilities or terrain funnel caribou movement.
3. Separate elevated pipeline/roads by 500 feet minimum, if feasible.
4. Place the pipeline on the appropriate side of the road to prevent delay or deflection of caribou, depending on caribou movement.
5. Traffic restrictions may include:
   - convoying
   - busing
   - caribou movement monitoring, and
   - controlling traffic when caribou crossings are imminent.
6. Consider orientation of linear corridors when laying out fields to address migration, corralling effect, and avoiding loops of road and/or pipeline that connect facilities.
7. Biological studies of caribou movements and use of area will be conducted prior to development plan design, to determine how to best locate facilities. Lessees will fund these studies through a joint state/federal/borough oversight committee immediately after the leases are awarded.
8. There will be a zone within two miles of the Beaufort Sea coastline that will allow only necessary permanent surface occupancy.
   Examples of necessary will include:
   a. a staging area or causeway that requires a year-round road to the inland area,
   b. a seawater treatment plant and associated pipeline or road, or
   c. a production pad for an oil field that cannot be produced from outside the two-mile zone.

Examples of unnecessary are:
   a. airports,
   b. camps, and
   c. some processing facilities.

The burden of proof as to necessity is with the lessee.

9. Use maximum feasible extended-reach drilling for production drilling.
10. No seismic activity or exploratory drilling from May 1 through September 30.
11. Road traffic from May 20 through June 20 will be minimized (a reasonable target would be four convoy round trips per day between facilities).
12. From May 20 through June 20, traffic speed will be reduced to 15 mph.
13. Major equipment, materials, and supplies will be stockpiled at work site prior to and after May 20 through June 20 to minimize road traffic.
14. Use of aircraft larger than a Twin Otter between May 20 and June 20 will be for emergency purposes only.
15. Aircraft traffic takeoffs and landings will be limited to an average of one flight a day between May 20 and June 20 at aircraft facilities, except for emergencies.
16. Hunting by all oil field workers is prohibited.

17. All facilities except airstrips, docks, and seawater treatment plants will be located on drill pads.
18. If possible, airstrips will be integrated with roads.
19. Putrescible waste disposal will not attract calf predators, by using, for example, bear-proof dumpsters, fenced camps, incinerators, backhaul, or enclosed compost.
20. A north-south corridor between Teshekpuk Lake and Kogru Inlet is a crucial area for caribou movement.
    - buried pipeline
    - zone of no permanent surface occupancy extending four miles east from eastern shore of Teshekpuk Lake.
21. Within the designated crucial areas—the movement corridors to the east and northwest of Teshekpuk Lake—facilities placement will receive greater scrutiny.
22. Encourage off-lease site development in crucial areas.

Group Review and Synthesis of Stipulations

Review of Stipulations

Caribou Stipulations:

Both panels reconvened as one group and reviewed the 22 draft stipulations for caribou. There was a concern that the height requirement for pipelines in #1 didn't specifically address human (and snowmobile) passage under pipelines. However, this was a subsistence issue and fell outside the purview of this workshop.

The third stipulation contained a minimum distance for separation between pipelines and roads, but did not specify a maximum distance. This could be a concern if the only method of spill monitoring was visual inspection from a road-based vehicle. However, with the capability of aircraft-mounted radar for spill monitoring there would be no reason to specify a maximum distance.

The two-mile coastal buffer referred to in #8 is an area in which the panel would prefer to see absolutely no development. Since that may not be feasible under an EIS alternative that allows leasing in the entire area, this stipulation was developed so that the oil industry would understand that any development plans in that zone would be under greater scrutiny.

The requirement for maximum feasible extended-reach drilling in #9 was not tied to a specific area. It was intended to cover the entire area addressed by this workshop.

The intent of #13 was to minimize traffic during that one-month period of May 20 through June 20.

Waterfowl Stipulations:

The buffers referred to in #5 were intended to exclude all permanent facilities except pipelines. The features implied in #9 to screen the view from geese were snow fences or something similar. The restriction described in #11 was meant to apply to all animals, including gulls and ravens, which are not covered under existing law.

The restrictions on public access in #2 and #17, and on roads in #3, were developed so that new facilities would not provide additional access for the public. One concern was that people might boat to a facility and then use the facility's road system to get to other areas. However, a road between fields might be less disturbance overall than separate facilities for each small oilfield.

There was considerable discomfort among the group regarding how vague both sets of stipulations were on just how extensive a road network might be built in the Teshekpuk Lake area. It was obliquely referenced in #7 of the caribou stipulations. Could that be expanded to say "roads in this area will not be connected together to the extent possible"? If #3 of the waterfowl stipulations was changed to remove "molting" so that it would apply as well to the entire caribou area, it might be the best that could be done without knowing where and what types of development would be needed.

Resolution of Conflicts Between the Sets of Stipulations:

There was concern that #1 and #5 of the waterfowl stipulations might push development into areas that are critical to caribou. The specific habitat addressed in waterfowl #1 is immediately adjacent to lakes. Both #1 and #5 of the waterfowl stipulations need additional GIS analysis to delineate those areas in the document. There may not be an actual conflict.

Waterfowl #2 was eliminated since it was covered by #17. Waterfowl #16 limits vehicle traffic to two shift changes per day, whereas the caribou panel suggested no more than four round trip convoys each day. These two stipulations address two time periods that barely overlap. During the overlap period the more restrictive should apply. The

same could be done for seasonal restrictions on fixed-wing aircraft where they overlap in time and area.

Does the restriction on helicopter flights in waterfowl stipulation #13 mean that no wildlife surveys could be done by helicopter during that time? These stipulations would apply only to oil and gas lessees, not to agencies. However, there might be the impression of an unfair double standard; agencies should coordinate better in the future to ensure that helicopter flights during that period are the minimum necessary for mission accomplishment.

A better definition of prohibited construction activities should be included in waterfowl #15. It was meant to limit construction activities using heavy equipment. Drilling rigs should be excluded from the definition of heavy equipment.

Residual Impacts

The final goal of the workshop was to determine what the residual impacts to wildlife would be, given the application of the above stipulations. However, this question could not be resolved because there was not adequate quantitative information for either caribou or molting geese. Residual impacts could only be described in a qualitative manner.

Since there is practically zero tolerance for human activity in a caribou calving area, the result of any development would be some displacement of calving caribou. The extent of this cannot currently be quantified and it is unknown if it would translate into population loss. There are recent data from the CAH that suggest that it might.

Neither the number of molting geese that might be displaced nor the energetic costs of that displacement can be estimated. In general, the result of development would be the disruption of caribou movements, some localized displacement of molting geese and calving caribou, and some harassment of caribou and geese. Finally, given the lack of energetic tolerances, there would likely be energetic stress, increased mortality and decreased productivity in caribou and geese.

Buffer Widths for Goose Molting Lakes

On May 28, 1997, Philip Martin, Anne Morkill, Jack Winters, Dave Yokel and BLM's GIS specialist Tim Hammond met to discuss the buffers around lakes used by molting geese. Several assumptions and guidelines were first established:

- Pipelines within buffers would not negatively impact molting geese.
- Goose foraging habitat extends up to 100 m from lake edges.
- The disturbance effect of vehicle traffic lessens at distances over 400 m.
- No study has shown a lessening of the disturbance effect of foot traffic at distance. This phenomenon has not been studied at distances greater than 1000 m, although some anecdotal observations have been made during other studies.

Using GIS technology, several options for buffers were investigated with the goals of providing geese adequate protection based on the above assumptions while still allowing the development of any discovered oil fields. The most reasonable solution found for satisfying both goals was a two-step approach. A 500 m buffer would be established around all goose molting lakes. Only pipelines would be allowed within that buffer. In addition, a 1000 m buffer would be established around those lakes that cumulatively account for at least 80% of the molting brant, and 50% of each of the other three species. Within the area between 500 m and 1000 m of these lakes, roads and production-only pads would be allowed, but all other facilities, including airstrips, would not. By the above goose population percentage criteria, this additional buffer was applied to 40 lakes that account for 83% of the brant, 69% of the Canada geese, 58% of the greater white-fronted geese, 75% of the snow geese and 73% of all geese combined.

Since it was recognized that these stipulations might preclude the development of some oil fields, depending on their location, depth and orientation, it was decided to include the provision that in such a situation exceptions might be made by the BLM in consultation with the USFWS.

Development of a Combined Set of Stipulations

On June 2, 1997, a teleconference to merge the caribou and waterfowl stipulations was attended by panelists Jim Craig, Joe Dygas, Don Hansen, Philip Martin, Anne Morkill, Tom Rothe, Dick Shideler, Jack Winters and Dave Yokel. Also participating were workshop attendees Phyllis Casey, Marie Crosley, Jim Ducker, Johanna Munson, Mark Myers, Dick Roberts, Pam Rogers and Curt Wilson. Each of the two sets of stipulations were separated into categories (see below) to expedite comparisons. A single set of stipulations with no redundancy and

presumably no contradictions was developed from these. This list represents the final recommendations of the workshop panelists to the BLM for the management of oil and gas development in the Teshekpuk Lake area, should it occur.

The area that encompasses the caribou calving and summer use areas is larger than, and includes in its entirety, the area that encompasses the lakes used by molting geese. If any of the stipulations listed below is meant for the goose area only, it is so noted. Those stipulations that are meant to protect caribou may in some cases increase the potential impacts to molting geese, and vice versa. This cannot be ascertained until the design plans for a specific development project are drafted, which won't take place unless an economically developable oil field is discovered in the future. At that time the BLM, in consultation with the USFWS, shall decide how to resolve any conflict between two or more stipulations.

Final Workshop Stipulations

Biological Studies:

1. Immediately after leases are awarded, to allow completion prior to development plan design, conduct studies of caribou movements and use of the area to determine how to best locate facilities. Lessees shall fund these studies in proportion to acreage leased. The studies shall be designed and the ensuing work awarded through a joint state/federal/borough oversight committee.

Oil Field Design:

2. All goose molting lakes (Figure 6) shall have buffer zones of 500 m surrounding the lakes. Within these buffers no permanent structures, excluding pipelines (e.g., roads, pads, airstrips, material sites), shall be located. High use lakes (Figure 6) shall have a 1,000 m buffer zone within which no permanent structures, excluding pipelines, shall be located. If the above restrictions preclude development, exceptions shall be made by the BLM in consultation with the USFWS. Exceptions may also be granted if other alternatives are demonstrated environmentally preferable.

3. There will be a zone within two miles of the Beaufort Sea coastline (Figure 5) in which only necessary permanent surface occupancy will be permitted. Examples of necessary include, but are not limited to: 1) a staging area or causeway that requires a year-round road to the inland area; 2) a seawater treatment plant and associated pipeline or road; 3) a production pad for an oilfield that cannot be produced from outside the two-mile zone. Examples of unnecessary are: 1) airports, 2) camps, and 3) some processing facilities. The burden of proof as to necessity is with the lessee when a development plan is submitted to the BLM.

4. There are two narrow land corridors between Teshekpuk Lake and the Beaufort Sea (northwest and east of the lake; Figure 5) that are crucial caribou movement corridors. Within these two areas:
   a. Facilities placement will receive greater scrutiny by BLM during development plan design.
   b. Off-lease site development would be encouraged if it would reduce development within a crucial area.
   c. Burial of pipelines may be required.
   d. There will be a zone of no permanent surface occupancy extending four miles east from the eastern shore of Teshekpuk Lake in the area between the lake and Kogru Inlet.

5. Use maximum feasible extended-reach drilling for production drilling to minimize number of pads and the network of roads between pads.

6. All facilities except airstrips, docks and seawater treatment plants will be co-located with drill pads. Exceptions may be granted or required by the BLM, in consultation with the USFWS, if a development is permitted within 1000 m of a high-use goose lake.

7. If possible, airstrips will be integrated with roads.

8. Orient linear corridors when laying out fields to address migration and corralling effects, and to avoid loops of road and/or pipeline that connect facilities.

9. Exploration and development activities will avoid alteration of critical goose feeding habitats

(grass/sedge/moss) along lakeshore margins (Figure 3).

10. Facility layout shall incorporate features (e.g., temporary fences, siting/orientation) that screen/shield human activity from view of any goose molting lake within 3 km.

11. Cross-drainage structures will be sited, maintained, and properly abandoned to prevent impoundments or alteration of local or areawide hydrology.

12. Any elevated pipeline will be a minimum of 5 ft high at VSMs, measured at VSM between highest point of ground and bottom of pipe.

13. Ramps, buried pipe, or pipe buried under the road may be required where facilities or terrain funnel caribou movement.

14. Separate elevated pipeline from roads by 500 ft minimum, if feasible. Examples of where it might not be feasible: narrow land corridor between lakes; and where pipe and road converge on a drill pad.

15. Place the pipeline on the appropriate side of the road (depends on general caribou movement in that area) to minimize delay or deflection of caribou.

Vehicle Traffic:

16. Traffic restrictions will be required from May 20 to Aug 20:
    a. May 20 through June 20:
        1. Traffic speed will be reduced to 15 mph.
        2. Traffic minimized (a reasonable target would be four convoy round trips per day between facilities). Nonessential operations requiring vehicles shall be suspended during this time period.
    b. May 20 through August 1:
        1. Caribou movement monitoring
        2. Traffic cessation when caribou crossings are imminent.
    c. May 20 through August 20:
        1. Convoying
        2. Busing of personnel
    d. June 21 through August 20 (goose area only; Figure 2):
        1. traffic minimized (a reasonable target would be four convoy round trips per day between facilities). Nonessential operations requiring vehicles shall be suspended during this time period.

17. Major equipment, materials and supplies will be stockpiled at each worksite prior to and after the period May 20 through June 20 to minimize road traffic.

Aircraft Traffic:

18. Use of aircraft larger than a Twin Otter from May 20 through August 20 will be for emergency purposes only.

19. Helicopter overflights within the goose molting area (Figure 2) will be suspended from June 15 through August 20.

20. Fixed-wing aircraft take-offs and landings will be limited to an average of one flight a day from May 20 through June 20 at aircraft facilities. Within the goose molting area (Figure 2), fixed-wing aircraft flight shall be further restricted from June 15 to August 20:
    a. limited to 2 round-trip flights/week;
    b. restricted to flight corridors established by BLM in consultation with the USFWS. Human safety and emergencies take precedence over these restrictions.

Garbage:

21. The handling and disposal of putrescible waste shall be accomplished in a manner to prevent the attraction of wildlife.

Other Activity:

22. No seismic activity or exploratory drilling from May 1 through September 30.

23. Water extraction from lakes used by molting geese (Figure 2) shall not alter hydrological conditions that could adversely affect identified goose feeding habitat along lakeshore margins.

24. Major construction activities (e.g., sand/gravel extraction and transport, pad construction, but not drilling) shall be suspended in the goose molting area (Figure 2) from June 15 through August 20 unless approved by the BLM.

25. Off-pad activity, including humans on foot,

shallbe prohibited in the goose molting area (Figure 2) from June 15 through August 20 except in emergencies, unless approved by the BLM.

26. Feeding of wildlife (including gulls and ravens) shall be prohibited.

27. Hunting by lessees' employees and/or by employees of lessees' agents, contractors and subcontractors shall be prohibited.

28. Public access to goose molting areas by way of or through the use of oil field facilities shall be prohibited.

Oil Field Abandonment:

29. Roads, airstrips and other gravel fill shall be removed upon field abandonment so as to render them unusable for enhanced access into the area.

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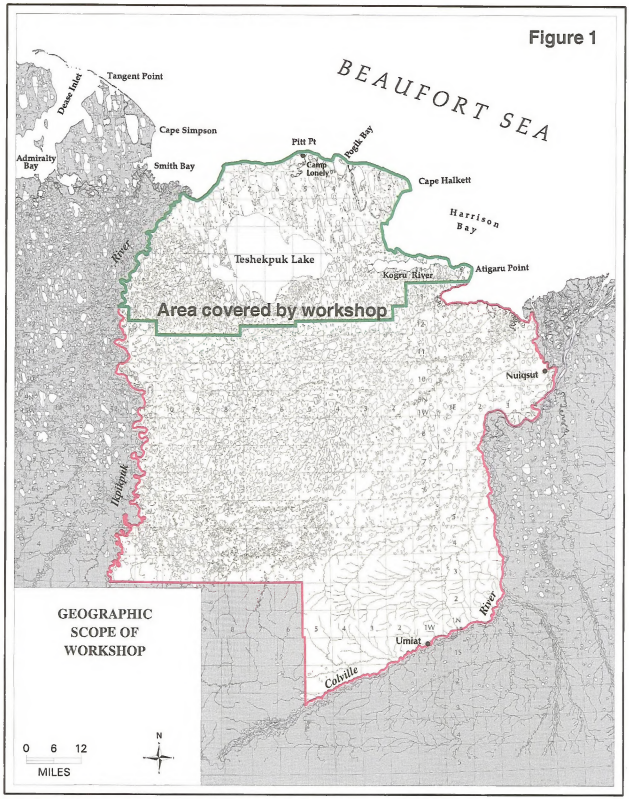


Figure 1
BEAUFORT SEA
Tangent Point
Dease Inlet
Cape Simpson
Admiralty Bay
Smith Bay
Pitt Pt
Camp Lonely
Pogik Bay
Cape Halkett
Harrison Bay
Teshekpuk Lake
Kogru River
Atigaru Point
Area covered by workshop
Nuiqsut
Ikpikpuk River
Colville River
Umiat
GEOGRAPHIC SCOPE OF WORKSHOP
0 6 12
MILES
N

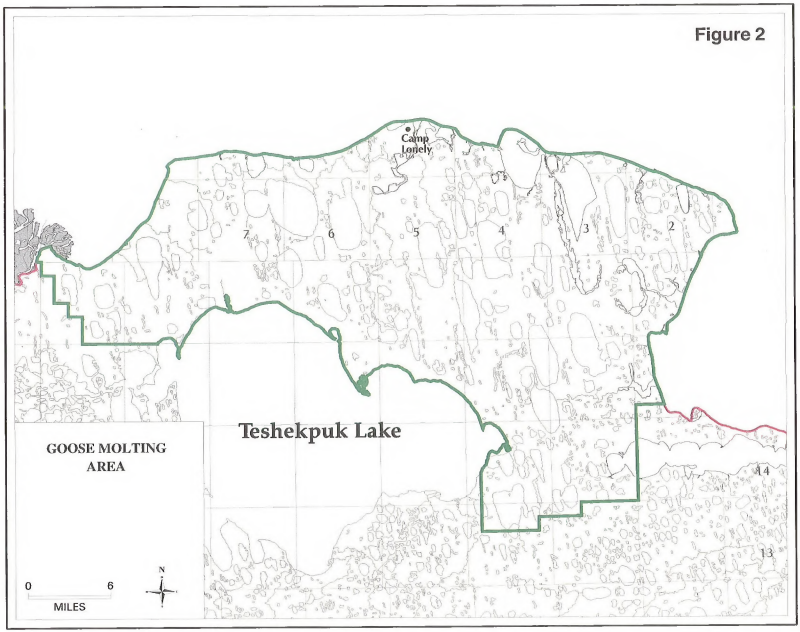
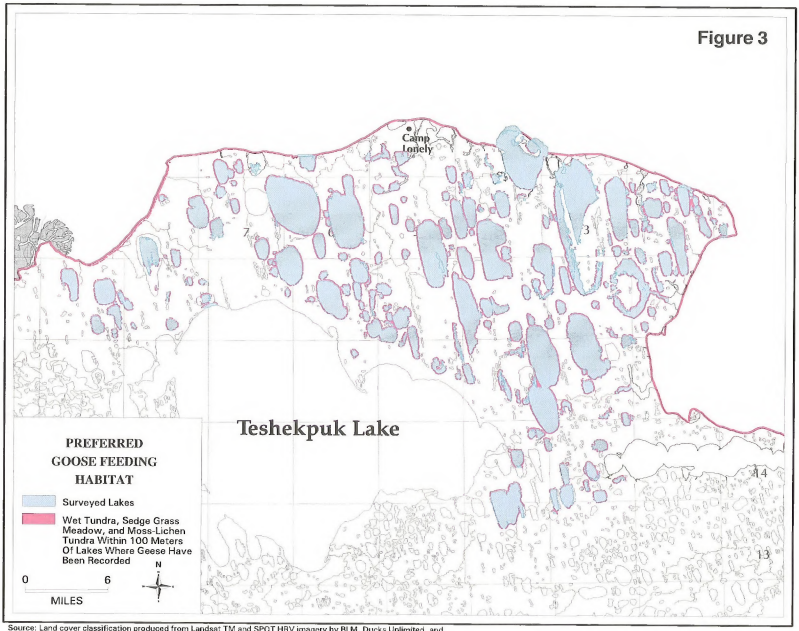


Figure 2
Camp Lonely
7
6
5
4
3
2
Teshekpuk Lake
GOOSE MOLTING AREA
14
13
0
6
MILES
N



Source: Land cover classification produced from Landsat TM and SPOT HRV imagery by BLM, Ducks Unlimited, and Pacific Meridian Resources.

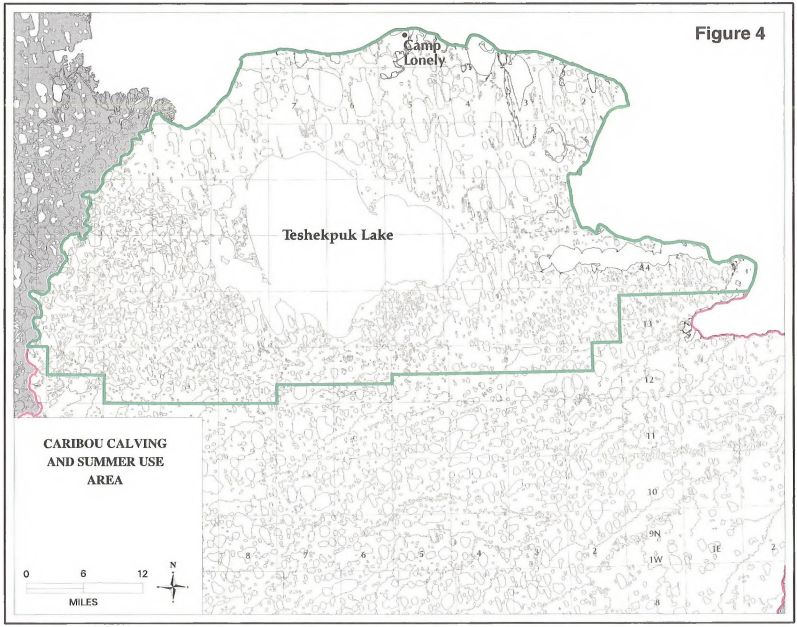


Figure 4
Camp Lonely
Teshekpuk Lake
CARIBOU CALVING AND SUMMER USE AREA
0
6
12
MILES
N
9N
1W
1E

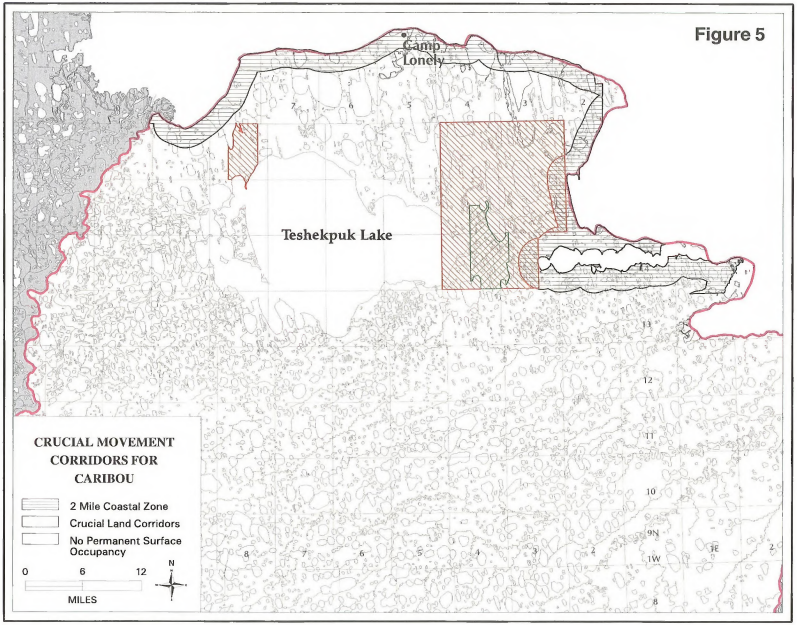


Figure 5
Camp Lonely
Teshekpuk Lake
CRUCIAL MOVEMENT CORRIDORS FOR CARIBOU
2 Mile Coastal Zone
Crucial Land Corridors
No Permanent Surface Occupancy
0
6
12
MILES
N
9N
1W
1E

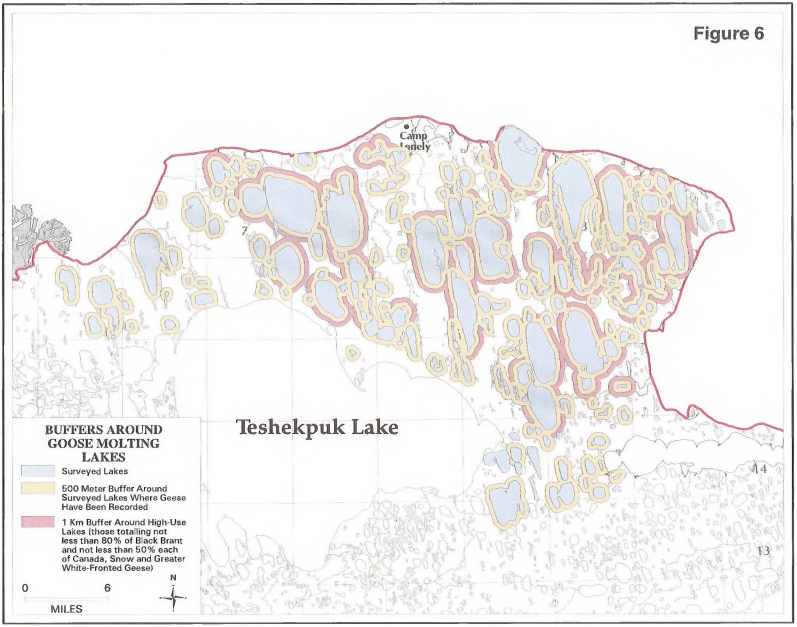


Figure 6
Camp Lonely
7
3
14
13
Teshekpuk Lake
BUFFERS AROUND GOOSE MOLTING LAKES
Surveyed Lakes
500 Meter Buffer Around Surveyed Lakes Where Geese Have Been Recorded
1 Km Buffer Around High-Use Lakes (those totalling not less than 80% of Black Brant and not less than 50% each of Canada, Snow and Greater White-Fronted Geese)
0
6
MILES
N

Appendix A
Teshekpuk Lake Area
Development Questions

The questions below refer to an assumed economically viable oil field in the Teshekpuk Lake area. This is the northern portion of the NPR-A planning area, bordered by the Ikpikpuk River on the west, the Beaufort Sea on the north and east, and approximately north latitude 70 degrees, 20 minutes, on the south.

Oil field Design

- What level of processing would be needed? For example, will CPFs, Water-flood STPs, CGFs, etc. be needed, or could enhanced recovery be handled from the Kuparuk or Alpine field? How much development triggers necessity for these facilities? What are the considerations in locating processing facilities remote from production pads?

- Would oil field support infrastructure similar to Deadhorse be required? If not, how would support services (e.g., mud contractors, tool services, logging and cementing) be provided? How much development triggers a requirement for a service center in NPR-A? Would the industry look to private sources (for example a KIC-type development on Arctic Slope Regional Corporation land) for support service center?

- Under what circumstances would a dock or other facilities along the Beaufort Sea coast be considered? Address two scenarios: onshore development within the NPR-A planning area and potential offshore development.

- Would a jet airport be required, or could transportation needs be met with a smaller runway or with no airport?

- How would other drainages (e.g., Fish Creek) be crossed?

- How feasible is the use of horizontal drilling (sensu Niakuk) to reduce pad density? What factors (e.g., geological, economic) affect pad density and the potential use of horizontal and directional drilling?

- Is an oilfield without inter- and intra-connecting roads feasible?

- What are the trade-offs on elevating a pipeline 8 ft instead of 5 ft?

- Given the experience on the Badami project, are buried pipelines feasible?

- Would existing DEW-line sites at Kogru and Lonely be given priority as sites for oil and gas facilities?

Operations

Three levels of "reduced activity" are conceivable:

- Complete shut-in during the caribou calving/insect-relief and goose molting periods (May through mid-August).

- Remote operation of production wells, with no human on-site except in emergency.

- Minimally staffed production sites, with reductions in access (aircraft and vehicular) and suspension of drilling, well maintenance (e.g., work-overs) and other high-disturbance activities.

Compare the pros and cons of these scenarios. What sorts of seasonal shut-down or activity restrictions are feasible for constructing and operating oil fields? What risks/costs are entailed in remote operation of production wells? If production wells are not road-accessible, would there be a need to have operators flown in and out during the June-July period? Is it possible to house a small crew on the pad and commute from a remote site? How often would crews change out? What are the safety/environmental risks associated with lack of road access?

- Would industry close the oilfields to public access?

- How could solid waste collection, storage, transfer and disposal be handled to eliminate access to garbage by wildlife (bears, wolves, foxes, gulls, ravens) that may result in localized

high populations of these predators? What can be done to improve current practices, and to enforce existing regulations?

- Where will gravel for construction come from? Are there alternatives (e.g., sand) that are feasible?

- What restoration strategies would be considered upon cessation of use, especially considering the importance of reduced human presence in the area, long-term?

- Would industry consider sharing seismic data gathered from one program, to avoid multiple seismic operations over the same area?

Appendix B
Molting Geese in the Teshekpuk Lake Area and Migratory Birds of the Arctic Coastal Plain

(From surveys conduced by U.S. Fish and Wildlife Service, Migratory Bird Management, Fairbanks, Alaska)

Aerial surveys of the Arctic Coastal Plain (ACP have been conducted intermittently since 1977. Emphasis has been on waterfowl and related waterbird species. Initial surveys on the NPR-A were conducted by Rodney King during 1977 and 1978 and resumed on all waterbird habitats on the Arctic Coastal Plain in 1986. These surveys documented the importance of the Arctic Coastal Plain to northern pintail, oldsquaw, scoter and eider ducks as well as white-fronted geese, tundra swan and loons. From 1982 to present, aerial survey have also been conducted on selected lakes in the Teshekpuk Lake area. These annual surveys during mid-July have documented the continued use by molting black brant, greater white-fronted geese, Canada geese and lesser snow geese. These surveys across the Alaska Arctic continue to record the importance of the area to many breeding and molting migratory birds.

The annual survey of molting geese in the Teshekpuk Lake area has documented a 15-year mean of 17,600 black brant, 13,000 Canada geese, 7,000 greater white-fronted geese and 200 lesser snow geese. Total average goose use for the 199 lake areas surveyed is 38,000 annually. This data emphasizes the importance of the area not only locally, but continentally.

Arctic Coastal Plain survey lines have been positioned to give statistically valid samples that verify the importance of arctic areas to migratory birds. The current 11-year survey has documented an average of 230,000 Northern pintail, 122,000 oldsquaw, 32,000 scaup, 12,000 scoter, and more than 20,000 eider ducks, as well as 105,000 greater white-fronted geese, 8,000 tundra swan and more than 30,000 loons. Significant proportions of these species habitually use the NPR-A and the Northeast Planning Area. It is incumbent that these habitats are identified and their integrity preserved for continued use by all migratory birds.

APPENDIX F

Northeast NPR-A Integrated Activity Plan EIS Subsistence Impact Analysis Workshop Proceedings

NPR-A
Subsistence Impact Analysis Workshop
Proceedings

August 19-21, 1997
Nuiqsut, Alaska

Sponsored by:
U. S. Department of Interior
Bureau of Land Management

Compiled by:
Anne E. Morkill
BLM Northern District
1150 University Avenue
Fairbanks, AK 99709

September 1997

Introduction: The Bureau of Land Management (BLM) is preparing an Integrated Activity Plan Environmental Impact Statement (IAP/EIS) for the northeast portion of the National Petroleum Reserve-Alaska (NPR-A). The BLM convened an intergovernmental panel of technical specialists and community representatives on August 19-21, 1997, in Nuiqsut to listen to community concerns about the potential for oil exploration, development, and production activities in the 4.6- million acre northeast planning area. The workshop panel's task was to develop recommendations for BLM's consideration to protect subsistence users and uses in the planning area. The BLM will evaluate the recommendations in light of administrative and legal constraints and incorporate a set of adopted recommendations into the Draft IAP/EIS for public review and comment. These proceedings summarize public comments heard during three community meetings in Nuiqsut and Barrow, panel discussions and brainstorming ideas, and final recommendations.

Background: On February 13, 1997, BLM published a Notice of Intent (Notice) to prepare the Northeast NPR-A IAP/EIS. The Minerals Management Service (MMS) was engaged by BLM to assist in preparing the IAP/EIS. In addition to initiating a public scoping period to identify issues for the environmental analysis, BLM and MMS sponsored an NPR-A Symposium on April 16-18, 1997, to review the most current information on resources and their uses in the planning area and the potential impacts that may be incurred from various land use activities (MMS, 1997). More than two dozen speakers from various government agencies, academia, industry, and private consulting companies gave presentations during the 3-day symposium held in Anchorage, which was open to the public and attended by more than 130 people. Panelists of the North Slope Village Subsistence and Socioeconomics section made several recommendations concerning subsistence as a critical issue to be addressed in the IAP/EIS (George, 1997), including one to evaluate the effectiveness of current Federal and State subsistence mitigating measures associated with oil exploration, development, and production activities and to determine if additional measures were needed to adequately protect subsistence users, uses, and resources. The BLM consequently convened two workshops, one to develop stipulations for waterfowl and caribou resources in the Teshekpuk Lake area and a second to specifically address subsistence uses and users in the planning area. These proceedings resulted from the second workshop.

The Teshekpuk Lake Waterfowl/Caribou Impact Analysis Workshop was held May 21-22, 1997, in Fairbanks to provide BLM with various recommendations for effective design features, seasonal closures, and surface occupancy restrictions in areas critical to waterfowl and caribou (BLM, 1997). While these recommendations addressed important subsistence resources, subsistence users, uses, and access were important elements that were not addressed during the first workshop. Staff from BLM, MMS, State of Alaska, and NSB subsequently held several meetings in June and July 1997 to discuss proposals for a second workshop specifically addressing subsistence. Key points of consensus were that a subsistence workshop should be held as early as feasible during the planning process to incorporate findings into the draft IAP/EIS, and that the workshop should take place on the North Slope to facilitate input by local communities that practice customary and traditional subsistence activities in the planning area. The workshop was subsequently scheduled for August 19-21, 1997, in Nuiqsut, with public meetings scheduled in Nuiqsut and Barrow.

Workshop Format: A 13-member, intergovernmental panel of technical experts and community representatives was established to achieve the goals of the workshop. Members were selected based on their knowledge of subsistence resources and uses on the North Slope with input from local community members. Due to the legal requirements of the Federal Advisory Committee Act (FACA) and the Unfunded Mandates Reform Act of 1995 (which amended FACA), the panel had to be comprised of elected officials or their designees. Designees were employees of Federal, State, local or federally recognized tribal governments. Community representatives were employed by the NSB and also represented their communities on the NSB's Fish and Game Management Committee. Because of the legal limitations, the workshop agenda also included public sessions so that the general community (individuals and representatives that do not directly represent government agencies) could provide the panel with input on the topic. The panel below considered the public comments during their discussions on developing management practices and design features for protecting subsistence uses and activities.

BLM Wildlife/Subsistence - Dave Yokel
MMS Socioeconomic Analysis - Michael Baffrey
MMS EIS Team Representative - Paul Stang
ADF&G Division of Wildlife Conservation - Geoff Carroll

ADF&G Division of Subsistence - Sverre Pedersen
NSB Department of Wildlife Management/Biology - Craig George
NSB Department of Wildlife Management/Subsistence - Harry Brower, Jr.
NSB Department of Planning and Community Services - Jon Dunham
Inupiat Community of the Arctic Slope - Gordon Upicksoun
Barrow Representative - Arnold Brower, Jr.
Nuiqsut Representative - Mark Ahmakak
Atqasuk Representative - James Kignak, Sr.
Anaktuvuk Pass Representative - Thomas Rulland (alternate: Dorothy Hopson)

A workshop participant list is included at the end of the proceedings. The public meetings and panel discussions were facilitated by Peggy Fox. Workshop planning and logistics were coordinated by Anne Morkill with assistance from Johanna Munson. Staff support was provided by Kelly Mahoney. Arnold Brower, Jr. interpreted during the public meetings in Nuiqsut and Barrow. The public meetings were announced in an *Arctic Sounder* newspaper advertisement and on KBRW Barrow public radio station. Fliers were distributed to various government agencies, community and regional organizations, industry, and environmental groups in all North Slope communities, Fairbanks, and Anchorage. The public meetings and panel discussions were electronically recorded, and the panel's presentation in Barrow was broadcast regionally on KBRW.

Nuiqsut Public Meeting: The NPR-A Subsistence Impact Analysis Workshop began with a public meeting on the evening of August 19, 1997, at the Kisik Community Center in Nuiqsut. Approximately 20 to 25 community residents attended and presented information about subsistence activities and concerns about potential oil and gas leasing activities in the planning area. Their comments are summarized as follow[1]:

- Eighteen months is too short to study impacts on subsistence and protect resources and activities.
- Boundaries for planning area too large, appear to have changed. Cover whole subsistence area used by Nuiqsut.
- How can we prevent what is happening along the Haul Road to caribou and other wildlife - killed by vehicles.
- Community is dependent on resources and access to those resources. Tired of telling government the same information for years. Life will be hindered. We have been adversely affected and it will get worse. We continue to come and discuss issues, but they don't change. Very hard to live when two-thirds of community is suffering because animals and fish are reducing - taken away, sick, don't come any more.
- Wants to know when children will be able to hunt, continue to hunt where will they go.
- Want/demand employment for community residents - should be a preference. When hired given lowest skill jobs.
- What kind of future will our young people have - what to look forward to - job opportunities? When subsistence is taken away, what else do they have? Must be able to feed families. Many hardships - not enough jobs.
- Changes in animals are being experienced - although fat is good, taste is different. Fish are showing strange things, taste is different. Believe it is from contaminants.
- Helicopter use is affecting our ability to hunt. Hovering over animals. No discussion about where they will be - no communication about where people are going - dangerous, accidents can happen and we don't want that. Not appropriate to not let us know where they will be.
- Caribou are being turned when people are hunting.
- Landing sites for helicopter should be known, designated - so residents can plan and know what to expect and minimize effect on caribou.
- Scientists need to share what they learn about our land and resources - we find strange things [growths] on fish, etc., want to know what is going on.
- Are impact funds available for Nuiqsut? Can they be directed towards community - most impacted? State can grant funds to offset impacts.

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[1] Comments were summarized on flipcharts and electronically recorded during the public meetings. Complete transcripts are available upon request from BLM.

- Community is already impacted - why do we have to apply for a grant?
- At certain times fish disappear, contaminants destroy habitat, displace fish. Smoke has removed and scared caribou. They run away - feel threatened. Abnormal events affecting their harvest.
- Migration of caribou may be altered near development, during seismic testing. Waterfowl may be affected by oil slicks. Don't know why ptarmigan are missing - contaminants? Pipeline may obstruct movement of animals - look at known migration patterns.
- Alternatives don't provide for protecting a human life.
- If development occurs there should be no boundary identified to prohibit subsistence - want coexistence between development and subsistence activities - leave it open.
- Too high value being put on animals, birds and fish, and not enough on humans.
- Don't feel listened to - for 29 years saying same thing - for example - musk ox. Don't see information being used.
- Influx of muskox makes caribou move. Need to manage musk ox to enhance caribou, see them as serious threat to caribou, main resource for North Slope.
- Preferred hunting area for wolf and caribou near Ikpikpuk River and Teshekpuk Lake - will reduce hunting opportunity. If drilling, go west of Ikpikpuk River - not most preferred area.
- Mounds of gravel and pads impact land - don't want them left.
- Don't want mass development to extent seen at Prudhoe Bay.
- Exploration take place west of Ikpikpuk River.
- Previously (back to 1930's) there were many more animals. Now that there are muskox, have to go hunt further to get caribou. Caribou are not coming to traditional hunting areas.
- Need to protect family's use of traditional areas - protect allotment areas.
- Want subsistence oversight panel to oversee oil and gas activities - not to take away any agency's authority, but to monitor and communicate concerns with recommendations. Want NPR-A team to recommend the oversight panel - funding is critical to assure its success.
- Community is soliciting funding for Kuukpik oversight panel - $60,000 is not enough. Incorporation papers and bylaws are being drafted.
- Want guarantee that existing camps and related subsistence use areas are protected - not taken away and told to move by government.
- Use Alpine oversight panel to cover NPR-A.
- Prefer that traditionally used areas be excluded from development.
- Get educational material to community on how to apply for grants to obtain impact funds.

Panel Discussions in Nuiqsut: The workshop panelists reconvened at the Kisik Community Center on August 20, 1997, to discuss the information they heard from Nuiqsut residents the previous evening, to review sample subsistence stipulations from previous State and Federal leasing programs, and to begin drafting management practices and design features for protecting subsistence users and uses. Panelists began by sharing their impressions about what they heard expressed by Nuiqsut residents:

- They feel that 18 months is too short.
- Community needs assistance with grant writing.
- Community is tired of meetings and giving same information.
- Community wants to increase hunter access.
- Community wants to protect existing access.
- They feel frustration with increasing restriction on access.
- Extremely thoughtful comments and repetition of basic concerns.
- Lack of human resource in community to analyze documents and represent local concerns. The NSB needs to provide assistance.
- Community wants to be assured of protection of basic subsistence lifestyle. Theme continues to be paramount over years - should be foundation of all mitigation. Community doesn't have resources to influence policy or take advantage of opportunity for funding, such as grants.
- Northeast corner is rich in subsistence resources and community wants it protected. Have used resources consistently.
- Can we establish/identify some overall guiding principles and use as criteria or check points to assure protection.

- Must demonstrate we are sincere in trying to protect community relationship with the land.
- Some issues cannot be dealt with by this panel - need to tell community honestly about that and help them to get resolution to extent possible.
- They gave a sense of being overwhelmed by external influences and events.
- Whatever mitigation we develop needs to continue over time, responsive to continuing concerns or new conflicts that evolve.
- Community feels it is a victim, not a participant. Over years, faces and names and proposals change, but concerns aren't met. Need opportunity to participate in what goes on around them - must set stage for that to happen. Need to be able to influence planning process and continue into leasing.
- Record keeping must be done. Lot of work has been done relative to community, but it is not generally available. Need library or other mechanism be established as a central repository, made available to people aren't coming out to gather it again.
- Need to rethink our current process with these meetings - to gather information from public. Need to synthesize what we know and go and ask pointed question or test ideas that go beyond what we already know.
- Toxic substances in food chain is a strongly held perception that must be addressed.
- Biologists need to share information about what they are doing, learning, where they go, etc. Mechanism needed to improve communication while being cooperative and avoiding intrusion.
- People feel 90% of subsistence use is in NE Planning Area - want development left to occur outside this area.
- Must assist community with getting funds.
- Must assist with getting younger people education and employment.
- Don't want impacts seen from Prudhoe Bay.
- Firearms prohibition must be addressed. Example of restrictions and requirements that are unacceptable to residents.
- Animals are being affected, their movement is restricted as well as humans.
- Community doesn't want limits on access to funding - should get whatever amount is needed.
- Must look at cumulative impacts of other existing leasing and future leasing and development.
- Need a better way of documenting what is said - and maintaining information, perhaps within the community affected.
- Need to distinguish between what can be resolved and what can't. Put lot of effort on getting resolution quickly.
- Write down clearly how to get impact funds and make widely available and "user friendly."
- Government keeps coming back until community is worn down and gives up. Asked to trust government but they are seeing impacts the government/industry said wouldn't happen.
- No matter what, they always have to fight to protect subsistence rights.
- Need oversight panel and get it funded.
- Challenge to government is follow-through, feedback, ongoing communication - need better working relationships with communities.
- Muskox is analogous to oil industry.
- Community wants road to Colville; gas piped for community use; animal husbandry.
- Something has to come out that can be useful, helpful for people to live by.
- Need to empower local subsistence advisory panel.

The panel was presented with sample subsistence stipulations from various Federal and State oil and gas leasing programs and a set of subsistence stipulations drafted by MMS and BLM staff (with preliminary input from the NSB and State of Alaska) as a starting point for discussion. In addition, draft lease stipulations from the preliminary draft NPR-A IAP/EIS that address various surface resources and issues were provided to the panel. The panel subsequently addressed four main topics related to subsistence: advisory panel, access, traditional land use sites, and monitoring. Additional topics, such as cumulative impacts, were discussed as well. The following notes were preliminary ideas brainstormed by the panel, by topic:

1. Subsistence Advisory Panel

   Purpose/Responsibilities

   - Enhance subsistence livelihood in light of NPR-A development.
   - Keep community informed about regulations and management authority.

- First line conflict resolution.
- Advise BLM in its handling of development in NPR-A to assure least possible impact on subsistence.
- Establishment of historic trends and subsistence use patterns and monitor effects of development.
- Identify potential conflicts.
- Provide recommendations concerning planning, research, monitoring, and assessment activities needed to facilitate responsible development of the northeast portion of NPR-A.
- Planning - panel works with BLM in planning development process.
- Membership - interagency including community representatives.
- Form panel as early as possible following decisions on options discussed in IAP/EIS.
- Where does potential lessee fit in? Invited to participate in IAP/EIS process same as other interested parties. Industry and panel would interact when proposal to do exploration and/or development is received.
- Membership of panel should be limited to local residents (most directly affected) - Nuiqsut, Barrow, Atqasuk, Anaktuvak Pass.
- Work with industry as early as possible.
- Keep adjoining communities informed.
- Need repository of information available to advisory panel. Need authority to solicit information and request analysis.
- Agencies monitoring lessee must be required to respond to recommendations of panel.
- Continuity and consistency in collection of information and it's use among several subsistence advisory panels. Clearinghouse function look at all activities affecting subsistence.
- Kuukpik oversight panel covers same concerns by same local residents - recommend using that body and agreement to serve NPR-A.
- Kuukpik Oversight Panel mission statement appears to address all the concerns and ideas identified for the NPR-A subsistence advisory panel.
- Concern for how all advisory panel and agencies inter-relate how research is done and used.

Authority
- Would derive from FACA.
- Panel would make recommendations to BLM.

Membership
- Make as broad as possible to help assure panel recommendations are more likely to be acceptable to BLM.
- Regulatory agencies including tribal organizations.
- Consider using Kuukpik Oversight Panel to address issues on NPR-A?

Funding
- [Public Law] 93-638.

2. Access
   - As development occurs, access to traditional areas needs to be protected.
   - BLM has a legal responsibility to provide reasonable access:
     a) free passage for subsistence users through development areas. Industry cannot deny access and all facilities need to be designed to minimize physical barriers to passage;
     b) allow subsistence harvest activities within development areas;
     c) need to address how we will manage firearm use in development areas (may or may not be issue at this time).
   - Orientation/education of security personnel as to traditional uses and access needs by subsistence users.
   - Access and firearms go hand in hand = hunting.
   - Need to be able to go where the animals are.
   - Information needs to be disseminated to community in news letters, radios, provide signs (possibly in two languages).
   - Permittees or lessees in conducting their activities cannot restrict subsistence user access.
   - Adopt Alpine stipulation on access. Conflicts with proposed NPR-A stipulation "Public access to goose molting areas by way of or through the use of oilfield facilities is prohibited (under Alternative E)". Is there a conflict? Possible item/issue for advisory panel.
   - Considerable amount of research needed to document traditional access. Some of it is a matter of compiling and analysis.

3. Traditional Land Use Sites
   - Draft Management Practices/Stipulations Sec 4 appears to cover concerns on traditional land use sites.
   - No restrictions on accessing and using traditional land use sites.
   - Traditional land use sites (diverse) need to be inventoried and protected. Panel could assist in issues around sites as they develop.
   - Traditional Land use sites must be protected. Undocumented sites need to be reported to IHLC and BLM. Put high priority on Nuiqsut area.

4. Monitoring of Impacts on Subsistence
   - Monitoring current harvest patterns through
     a) increased hunter costs (entire provision);
     b) how harvested resources are shared;
     c) who is doing the harvesting (including proxy hunting);
     d) relationship of cash economy to subsistence economy.
   - Industry should do some monitoring while they are in process of exploration and development.
   - BLM should coordinate monitoring and implementation of a subsistence impact monitoring program for development activities within the planning area in consultation with the advisory panel.
   - Monitor socioeconomic health of community as conditions change.
   - Subsistence hunter needs to participate with those doing seismic surveys to monitor effects and how survey is being conducted.
   - Results of monitoring need to be evaluated.
   - How do we address impacts when they are happening? For example, when wildlife are being displaced during seismic surveying.
   - If subsistence advisory panel identifies the existence of impacts on subsistence uses in the planning area, it may make recommendations to BLM regarding:
     a) additional mitigation measures necessary to assure continued access to subsistence sites and to areas where harvestable resources are known to occur;
     b) potential relocation of operations or redesign of production, processing, and transportation facilities and;
     c) more effective enforcement mechanisms.
   - Need to protect resources from harassment. Harassment is a type of impact to subsistence.
   - Need to address contaminants left by contractors such as oil and gas spills (from refueling and used oil). Also, they will leave designated routes and harm grave sites, etc. Monitoring of contractors needs to increase to prevent violation and enforce rules.
   - Use local residents to conduct monitoring - draw funds from variety of sources. People could be hired from all communities.

5. Cumulative Impacts for North Slope
   - Nuiqsut is already impacted by Prudhoe development.
   - Advisory panel needs to be informed about cumulative impacts to enhance understanding of effects of new development.
   - Alpine will give us an opportunity to assess cumulative impacts on Nuiqsut.
   - Subsistence advisory panel could suggest what to measure to determine cumulative impacts or assess accuracy of projected incremental cumulative impacts as described in IAP/EIS. Then they could assess whether or not it is accurate.
   - Local residents already know what the cumulative effects are.
   - What happens when young people make money and set aside subsistence traditions - including going hunting? How do we maintain culture?
   - Funding assistance to address protection of resources for sustainable development.

6. Orientation/Education
   - Orientation/education of contractors and other industry representatives - MMS Sale 170 Stip. #2 include as part of stipulations. Proposed NPR-A stipulation, "It is the responsibility of the authorized user to assure all people brought into the planning area under its auspices adhere to these stipulations. . ." needs to be revised per MMS Sale 170 Stip. #2, Orientation Program.

7. Compensation of Subsistence Losses

- Compensation for subsistence losses need to be provided - models: Inuvialuit (Western Canada settlement and PWS settlement in Alaska is precedent setting.

Panel Presentation to Nuiqsut Residents: The panel presented their draft recommendations to Nuiqsut residents during a second public meeting at the Kisik Community Center on the evening of August 20, 1997. Approximately 15 to 20 people attended. The following comments and concerns were expressed by Nuiqsut residents, as summarized on flipcharts:

Comments on Subsistence Advisory Panel

- Don't agree with including villages other than Nuiqsut - that's where real impacts are.
- Wainwright is in NPR-A - why not represented?
- Each community within the NPR-A should have its own advisory panel - don't include any agency representation.
- Industry representation may be helpful to resolve problems.
- If Federal Agencies are involved in panels they may not be able to arbitrate between industry and residents.
- Majority of advisory panel members should be from Nuiqsut.
- Others from Federal Agencies could participate in panel if funding came with their participation.
- Concept and effectiveness of local advisory group is diluted with others being on panel.
- How would other residents be affected if only Nuiqsut is represented on the panel?
- Already have subsistence panel: Federal North Slope Subsistence Regional Advisory Panel.
- A local panel that influences decisions that affect local residents is valuable, if local panel will have better control.
- Where is funding going to come from to support panel needs?
- Funding from impact grants should go directly to community affected - not to support panel with broad responsibilities. Use Federal funds.

Comments on access

- How can people be assured access? Along the Haul Road/Pipeline firearms are not allowed. Why isn't that allowed if "reasonable access" is the criteria? A hunter needs to bring a firearm when accessing hunt areas.
- In the past, residents have been prevented access - this proposed management practice is news - and frustrating because no one is helping us to know what is right.
- Contractors have their own way of doing things, own rules and regulations. Wildlife does not have rules and regulations - no boundaries. Industry hasn't been concerned about details once documents are signed.

No comments on traditional land use sites

Comments on monitoring

- Concern for drilling for oil under an allotment: does allotment owner have a financial interest in revenues?
- Jobs are not made available to residents - promises made, but don't come through.
- Nuiqsut is most impacted - jobs need to be made available here first.
- If NPR-A is developed, require industry to hire biologists to evaluate fish and wildlife and provide information to protect them.
- Communications between agencies and NSB need to improve - misinformation is not acceptable. Want panel to find ways to improve. Arnold (NPR-A Coord.) is committed to facilitating communications and serve as liaison.

Comments on cumulative impacts

- Anaktuvuk Pass is directly affected when caribou migration is altered by development and adversely affects hunters of Teshekpuk Lake or Western Arctic caribou herd.
- Soot and other debris is in smoke from development appears to effect habitat of several wildlife species and believe it is resulting in reducing their numbers. Yellow smog is affecting habitat, not soot, this is pollution.

General comments

- Would only support drilling in N-NW corner of NE portion of NPR-A.

- State must make available impact funds to Nuiqsut now - most impacted community. Have municipal needs. BLM should fund panel - not impact funds. Nuiqsut has already been impacted and have not received any impact funds.
- Information on impact funds should be made available to communities ASAP.
- Concern for health of wildlife and fish is extremely important to protecting subsistence. Need to tie wildlife and other resource protection measures to subsistence protection.

Panel Presentation to Barrow Residents: The panel reconvened for a half day on August 21, 1997, at the Kisik Community Center in Nuiqsut to refine and revise their recommendations on protection measures for subsistence. The panel then presented these to an audience of approximately 5 to 10 people at the Barrow High School Auditorium in Barrow. The following summarizes comments and concerns expressed by Barrow residents:

- What is the duration of the advisory panel?
- Model for advisory panel is Federal subsistence advisory council - provides recommendations and is assured response by Federal Agencies (response to question re: panel making recommendations).
- Were recommendations developed by panel or community? Response - interactive, developed with community input and review.
- Enforcement - how can we enhance enforcement possibly working with NSB. permitting function. NSB is short staffed, just like BLM - can assist each other.
- Question about power or authority panel would have over oil and gas activities. Response - BLM cannot abdicate authority to a citizen panel. BLM and the NSB will work together to get compliance. Other agencies can also assist, such as State (ADF&G).
- What kind of control will communities - or agencies - really have over industry? How will it be different from compliance we get now? Response - Intent is to make management practices and mitigation measures to protect subsistence resources and uses become lease stipulations.
- Teshekpuk area has tremendous importance for subsistence. Concerned about rapid expansion of oil development. Want BLM and NSB to take charge and protect camps and uses. Critical for caribou calving and whitefish. Many studies have been done - use them to protect resources.
- Compliment the BLM for providing a panel made up of residents, Borough employees, and agencies and promoting cooperative work on subsistence issues in the face of potential development. Wish other agencies would follow example.
- Have you considered giving traditional use sites to local residents (specifically camp sites and cabins)?
- Traditional land use sites were the most troublesome during Prudhoe Bay development. Need comanagement agreement to protect these sites - put in writing.
- All the lands are traditional use areas. Native people are nomadic. Go where the resources are. Entire NPR-A is a traditional use area.
- Need to address cumulative impacts around seismic surveys, noise impacts on wildlife - they need to be identified and mitigated. Advisory Panel will have to address these impacts and results need to show up in permit requirements. Would be helpful to know what steps and procedures are needed to describe interaction between regulating agencies to assure compliance.
- What guarantee is there that lessons learned will be applied now and in future? Response: If something in overlooked or unforeseen, plan on using compensation stipulation and/or impact funds to compensate for subsistence losses or adverse effects.
- Funding should be provided for research to address concerns that come up for the advisory panel. They will need staff and research funds.
- Need this type of panel for every community facing potential oil and gas development. So important to have a Native panel - experts on land uses and impacts.

Panel Recommendations: The following recommendations are presented by the workshop panel to the BLM for consideration as management actions, lease stipulations, and/or information to lessees, and for incorporation into the Northeast NPR-A draft IAP/EIS to protect subsistence resources, uses, and users in the planning area.

1. Subsistence Advisory Panel: The BLM is encouraged to integrate public participation into decisionmaking and conflict resolution processes in relation to future potential exploration and development activities in the planning area. The following recommendation establishes a local Subsistence Advisory Panel that would facilitate community

input in BLM's land use planning efforts, follow that input through the decisionmaking process, and provide feedback to the community:

BLM should establish a local Subsistence Advisory Panel to:

a) ensure responsible development in the planning area that protects subsistence resources and uses, and

b) ensure protection of subsistence resources and uses by involving local communities and agencies in development decisionmaking.

The Subsistence Advisory Panel's authority should be derived through a formal charter under provisions of the Federal Advisory Committee Act.

Responsibilities of the Subsistence Advisory Panel should include:

a) identify and address potential subsistence-use conflicts in the planning area

b) provide recommendations to BLM concerning planning, research, monitoring and assessment activities needed to facilitate responsible development and protect subsistence resources and uses in the planning area (see also Subsistence Impact Monitoring Program below);

c) inform local community and agencies about panel activities and agency actions concerning subsistence protection in the planning area;

d) maintain repository of subsistence information for local communities and agencies. Include narrative, quantitative, and spatial information. May solicit information and request analysis from cooperating agencies and other organizations;

e) ensure continuity and consistency in the collection and use of subsistence information by the advisory panel and other advisory groups;

f) hold BLM accountable for replying to all panel recommendations. The BLM should respond in writing to the Panel's recommendations with regard to what their decision is. If a recommendation is modified or not adopted, BLM should set forth the factual basis and reasons for their decision.

Membership should be composed of local residents of those communities most affected by oil exploration, development and production activities in the planning area. Nuiqsut should have five voting members, and the following communities and agencies should have one ex-officio member each: Barrow, Atqasuk, Anaktuvuk Pass, Wainwright, BLM, ADF&G, NSB, and ICAS. Subsistence Advisory Panel meetings and support staff should be centrally located in Nuiqsut.

BLM should sponsor the Subsistence Advisory Panel through provisions of FACA, and provide funding through BLM appropriations and other available funding sources. The community of Nuiqsut does not support using State impacts funds for the Panel.

2. Subsistence Impact Monitoring Program: A key element in public policy decisionmaking is having access to adequate and appropriate data on both the resources and activities being evaluated. The following recommendation establishes a program for monitoring subsistence impacts from oil-related development activities and for adjusting management strategies to minimize or avoid impacts to subsistence resources, uses, and users:

A Subsistence Impact Monitoring Program should be developed cooperatively with input and resources from BLM, MMS, ADF&G Division of Subsistence, NSB, and the Subsistence Advisory Panel. The program should include (but is not limited to) procedures for:

a) asking hunters' concerns

b) documenting status and change of:

- resource damage
- resource displacement
- hunter access to resources
- increased competition for resources

- contamination levels in resources
- reduced harvests
- increased hunter efforts, risk and cost
- how harvest is shared
- who is doing the harvesting (including proxy hunting)
- relation between cash economy and subsistence economy

Subsistence monitoring should also be integrated with fish and wildlife monitoring to understand the relationships between the resource populations and their uses, and land use activities that may affect the abundance or distribution of important resources.

BLM should coordinate implementation of the Subsistence Impact Monitoring Program in consultation with cooperating agencies, the Subsistence Advisory Panel, and industry.

Lessees should conduct monitoring of subsistence activities in cooperation with BLM, cooperating agencies, the Subsistence Advisory Panel, and local communities under the guidance of the Subsistence Impact Monitoring Program while they are in the process of oil exploration, development and production.

Results of subsistence impact monitoring activities should be provided to the participating communities, the BLM and Subsistence Advisory Panel in the form of progress reports and final reports with supporting references and maps.

If the Subsistence Advisory Panel identifies the existence of impacts on subsistence uses based on monitoring results, it can make recommendations to BLM regarding:

a) additional mitigation measures necessary to assure continued access to subsistence sites and to areas where harvestable resources are known to occur;
b) potential relocation of operations or redesign of production, processing and transportation facilities; and
c) more effective mechanisms for enforcement of subsistence stipulations.

The BLM needs to address contaminants left by contractors, such as oil and gas spills. The BLM should increase monitoring of lessees, including their contractors and subcontractors, to prevent violations of lease stipulations and mitigation measures. The BLM and cooperating agencies should use local residents to conduct monitoring near their communities. Funding could be sought from a variety of sources.

3. Access: As development occurs, access to traditional areas needs to be protected. Considerable research is needed to document access routes so exploration and development activities do not interfere with subsistence access. This will involve compiling and analyzing available information as well as interviewing North Slope residents (see also Subsistence Impact Monitoring Program above).

The BLM has a legal responsibility under ANILCA Title VIII to provide reasonable access, including free passage for subsistence users through development areas, and allowing subsistence harvest activities to occur within development areas. Both access and the ability to use firearms in subsistence use areas are necessary for hunting. Industry cannot deny access, and all facilities need to be designed to minimize physical barriers to passage of both subsistence users and harvestable resources. The following recommended stipulations will minimize or avoid restrictions on access:

Lessees should not restrict access in oil field development areas to subsistence users. Lessees should establish procedures for entrance to facilities, use of permanent gravel roads, and firearms discharge. These procedures will be coordinated through the Subsistence Advisory Panel (modified from State of Alaska Alpine Development Stipulations, Applicant's Proposed Project, Pp. 2-26, October 4, 1996).

Any conflicts involving such activities as use of constructed roads by subsistence hunters, which

may foreseeably impact local wildlife resources (e.g., proposed NPR-A stipulation, "Public access to goose molting areas by way of or through the use of oilfield facilities is prohibited" under Alternative E), should be presented to the Subsistence Advisory Panel for resolution.

Lessees should develop and distribute information about how to hunt in development areas safely (so equipment is not damaged and people are not endangered) to the communities through newsletters, radio, and signs in both English and Inupiaq.

Other permittees (e.g. overland moves, other permitted land users) should not restrict access to subsistence users while conducting their permitted activities on Federal public lands in the planning area.

4. Traditional Land Use Sites: Traditional land use sites include grave sites, archaeological sites, historical camps and trading sites, currently used camps and cabins, and hunting areas. The Subsistence Advisory Panel should evaluate and resolve issues related to traditional land use sites, especially those where development activities could restrict access to areas identified by NSB as critical to subsistence or cultural values. The following recommended stipulations will minimize or avoid impacts to traditional land use sites, and provide for continued access to these sites by local residents:

Lessees should not restrict local residents' access to or use of traditional land use sites.

Traditional land use sites should be protected from disturbance or damage.

Undocumented sites should be reported to BLM and NSB Inupiat History, Language and Culture Commission when discovered. In some circumstances, the location of discovered sites may be requested to be kept confidential to preserve their original condition.

BLM and NSB/IHLC should place a high priority on inventorying the Nuiqsut area for undocumented sites.

5. Cumulative Impacts: Cumulative impacts of oil exploration, development and production affect wildlife resources and people both directly (e.g., reduced populations, changes in distribution) and indirectly (e.g., capital improvement projects fudned through tax revenues). Cumulative impacts are already affecting the community of Nuiqsut. Local residents have clearly stated that they know what these impacts are. Any development in NPR-A would add to these impacts.

The Northeast NPR-A IAP/EIS should address these questions. Cumulative impact analysis is a complex and ever changing issue as the landscape of the North Slope continues to change through time. Everyone concerned should review the cumulative impact analysis in the draft IAP/EIS and provide specific comments during the public review and comment period to the BLM for consideration and incorporation into the final IAP/EIS.

The Subsistence Advisory Panel will need information on cumulative impacts, and they can suggest how to measure impacts, and evaluate the adequacy of the EIS analysis. The BLM and cooperating agencies should continue to assess cumulative impacts through stages of oil exploration, development and production.

6. Orientation Program: Local residents expressed concern about restrictions on access and use of firearms in existing oilfield development areas, despite stipulations that provide for legal access. Such conflicts may arise due to lack of understanding or appreciation by oilfield personnel of local community values, customs, and subsistence lifestyle. The following recommended stipulation establishes an orientation program to address these concerns:

The lessee should include in any exploration or development and production plans a proposed orientation program for all personnel involved in exploration or development and production activities (including personnel of lessee's agents, contractors, and subcontractors) for review and approval by the BLM Authorized Officer. The program should be designed in sufficient detail to inform individuals working on the project of specific types of environmental, social, and cultural concerns that relate to the sale and adjacent areas. The program should address the importance of

not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, bird colonies, and marine mammals and provide guidance on how to avoid disturbance. This guidance will include the production and distribution of information cards on endangered and/or threatened species in the sale area. The program should be designed to increase sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which personnel will be operating. The orientation program should also include information concerning avoidance of conflicts with subsistence and pertinent mitigation.

The program should be attended at least once a year by all personnel involved in onsite exploration or development and production activities (including personnel of lessee's agents, contractors, and subcontractors) and all supervisory and managerial personnel involved in lease activities of the lessee and its agents, contractors and subcontractors.

Lessees should maintain a record of all personnel who attend the program onsite for so long as the site is active, not to exceed 5 years. This record should include the name and dates(s) of attendance of each attendee (modified from MMS Beaufort Sea Planning Area Oil and Gas Lease Sale 170, Section II, Alternatives, Stipulation No. 2).

7. Local Training and Hiring Program: Future potential development activities in the planning area could provide economic and social benefits to North Slope communities in the form of training and employment opportunities for local residents, which may offset potential impacts to social and cultural systems. Additionally, BLM and other agencies should recognize the traditional ecological knowledge and experiences of local residents and seek ways to provide opportunities for their participation in research and monitoring activities. The following recommended stipulations and management actions create local training and hiring opportunities:

Lessees should provide training and hiring programs for local residents to work in any/all phases of oil exploration, development and production activities, including community relations personnel for Nuiqsut who could serve as a liaison between the lessee and community. Lessee should use ASRC/Kuukpik job bank (Native Employment Management Program).

BLM, cooperating agencies, and industry should provide training and competitive hiring programs for local residents to participate in environmental and technical field studies (before, during, and after development).

BLM, cooperating agencies, and industry should recognize traditional ecological knowledge and hire local residents at competitive rates for their knowledge and experience.

8. Subsistence Loss Compensation: Subsistence resources and access are priceless to the residents of the North Slope and should be maintained to allow for the continuation of traditional subsistence activities in the planning area. Impacts to subsistence are both collective and individual in nature and can affect cultural traditions with social and economic ramifications. In order to provide "insurance" for those instances where damage does occur from oil exploration, development. and production activities despite sound management and protective measures, a comprehensive compensation program should be investigated and developed by BLM. Existing models are available from the Inuvialuit Final Agreement of the Western Arctic Land Claim (Canada, May 5, 1987) and Prince William Sound oil- spill settlement in Alaska. The need for comprehensive compensation recourses and procedures was also addressed by the Inuit Circumpolar Conference in their report, *Principles and Elements on Renewable Resources and Inuit Subsistence Rights* (ca. 1992). However, it is important to clarify that this recommendation is not meant to convey that subsistence resources and access can simply be "purchased" as a cost of doing business on the North Slope. Rather, the objectives of the subsistence loss compensation program are (a) to create an incentive to prevent damage to wildlife and fisheries resources and their habitats and to avoid disruption of subsistence harvesting activities by Nuiqsut, Barrow, Atqasuk, and Wainwright resulting from oil exploration, development, and production activities in the planning area; and (b) *if* damage does occur, to restore wildlife and fisheries resources and their habitats as far as is practicable to their original state and to compensate hunters, trappers, and fishermen for the loss of their subsistence-harvesting opportunities. The following recommended stipulation outlines a process for compensation of subsistence losses:

Lessee should be required to prove financial responsibility before being authorized to undertake any activity on a lease within the planning area. The lessee should provide for and ensure financial responsibility with respect to the obligations and undertakings provided in this stipulation in the form of a letter of credit, guarantee or indemnity bond or any other form satisfactory to the BLM and the Subsistence Advisory Panel.

Where it is established by BLM and the Subsistence Advisory Panel that actual subsistence wildlife or fisheries harvest loss or future loss was caused by development, the liability of the lessee should be absolute and liable without proof of fault or negligence for compensation to the injured party(ies) and for the cost of mitigative and remedial measures. Factors for determining the nature and extent of damages should include degree of injury to harvested resources and related habitats, importance of affected resources to Inupiat, dislocation of wildlife resources, duration of recovery period for resources affected, and future need for hunters to travel greater distances in search of game.

In those circumstances in which the BLM and Panel disagree on whether damage has occurred or what the liability should be, they are encouraged to initiate an alternative dispute resolution process mediated by a neutral third party to reach consensus. BLM has the ultimate decisionmaking authority and is responsible for ensuring compliance with lease stipulations.

9. Conflict Avoidance Agreements: Oil exploration, development, and production operations should be conducted in a manner that prevents unreasonable conflicts between the oil and gas industry and subsistence activities. One mechanism for assuring that such operations are compatible with subsistence hunting and fishing is a conflict avoidance agreement between the lessee and the affected community(ies). The following recommended stipulation provides for proactive consultation and conflict avoidance:

Prior to submitting an exploration plan or development and production plan, the lessee should consult with the potentially affected subsistence community(ies) (e.g., Nuiqsut, Barrow, Atqasuk), the NSB, and the NPR-A Subsistence Advisory Panel to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures which could be implemented by the operator to prevent unreasonable conflicts. Through this consultation, the lessee should make every reasonable effort, including such mechanisms as a conflict avoidance agreement, to assure that exploration, development, and production activities are compatible with subsistence hunting and fishing activities and will not result in unreasonable interference with subsistence harvests in the planning area.

A discussion of resolutions reached during this consultation process and plans for continued consultation should be included in the exploration plan or development and production plan. In particular, the lessee should show in the plan how its activities, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. Lessees should also include a discussion of multiple or simultaneous operations, such as ice road construction and seismic activities, that can be expected to occur during operations in order to more accurately assess the potential for cumulative affects. Communities, individuals, and other entities who were involved in the consultation should be identified in the plan. The BLM should send a copy of the exploration or development and production plan to the potentially affected community(ies), the NSB, and the NPR-A Subsistence Advisory Panel at the time they are submitted to BLM to allow concurrent review and comment as part of the plan approval process.

In the event that no conflict avoidance agreement is reached between the parties, the lessee, affected community(ies), NSB and/or NPR-A Subsistence Advisory Panel may request that the BLM initiate an alternative dispute resolution process mediated by a neutral third party to resolve the issues before making a final determination on the adequacy of the measures taken to prevent unreasonable conflicts with subsistence harvests.

The lessee should notify the BLM Authorized Officer of all concerns expressed by subsistence hunters during operations and of the steps taken to address such concerns. Lease-related activities

will be restricted when the BLM Authorized Officer determines it is necessary to prevent unreasonable conflicts with local subsistence activities.

In enforcing this stipulation, the BLM will work with other agencies and the public to assure that potential conflicts are identified and protective measures are implemented to avoid these conflicts (modified from MMS Beaufort Sea Planning area Oil and Gas Lease Sale 170, Section II, Alternatives, Stipulation 5).

10. Maintaining Healthy Wildlife Populations: The above recommendations provide protective measures for subsistence users. But it is important to note that one of the most important elements in protecting peoples' ability to subsistence hunt and fish is maintaining healthy wildlife populations that are available in sufficient numbers in both time and space. For example, the Teshekpuk Lake Caribou Herd is recognized as one of the most important subsistence resources for many of the villages on the North Slope. These caribou are harvested both within and outside of the planning area. If activities within the calving grounds, insect relief areas, or migration pathways detrimentally affect productivity or change movement patterns of the herd, it could impact subsistence hunters across the North Slope. Protective measures must be implemented to minimize impacts of oil exploration, development and production on critical fish and wildlife habitats; which will subsequently benefit both the wildlife populations and the subsistence users who rely on them.

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APPENDIX G

Wild and Scenic Rivers Management Objectives and Standards and Assessment Process

MANAGEMENT OBJECTIVES AND STANDARDS FOR DESIGNATED WILD AND SCENIC RIVERS

I. Wild Rivers

A. **Objective:** The management of wild river areas should give primary emphasis to protecting the values that make it outstandingly remarkable while providing river-related outdoor recreation opportunities in a primitive setting.

B. **Management Standards:** Allowable management practices might include construction of minor structures for such purposes as: improvement of fish and game habitat; grazing protection from fire, insects, or disease; and rehabilitation or stabilization of damaged resources, provided the area will remain natural appearing and the practices or structures will harmonize with the environment. Developments such as trail bridges, occasional fencing, natural-appearing water diversions, ditches, flow measurement or other water management devices, and similar facilities may be permitted, if they are unobtrusive and do not have a significant direct and adverse effect on the natural character of the river area. The following program management standards apply.

1. **Forestry Practices:** Cutting of trees will not be permitted except when needed in association with a primitive recreation experience (such as clearing for trails and for visitor safety or to protect the environment (such as control of fire). Timber outside the boundary, but within the visual corridors should, where feasible, be managed and harvested in a manner to provide special emphasis to visual quality.

2. **Water Quality:** Water quality will be maintained or improved to meet Federal criteria or federally approved State standards. (River management plans shall prescribe a process for monitoring water quality on a continuing basis).

3. **Hydroelectric Power and Water Resource Development:** No development of hydroelectric power facilities would be permitted. No new flood-control dams, levees, or other works allowed in the channel or river corridor. All water-supply dams and major diversions are prohibited. The natural appearance and essentially primitive character of the river area must be maintained. Federal agency groundwater development for range, wildlife, recreation or administrative facilities may be permitted, if there are no adverse affects on outstandingly remarkable river related values.

4. **Mining:** New mining claims and mineral leases are prohibited within ¼ mile of the river. Valid existing claims would not be abrogated and, subject to existing regulations (e.g., 43 CFR 3809) and any future regulations that the Secretary of the Interior may prescribe to protect the rivers included in the National System, existing mining activity would be allowed to continue. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution, and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims, subject to valid existing rights, within the wild river area boundary can be patented only

as to the mineral estate and not the surface estate (subject to proof of discovery prior to the effective date of designation).

5. **Road and Trail Construction:** No construction of new roads, trails, or other provisions for overland motorized travel would be permitted within the river corridor. A few inconspicuous roads or unobtrusive trail bridges leading to the boundary of the river area may be permitted.

6. **Recreation Facilities:** Major public-use areas, such as campgrounds, interpretive centers, or administrative headquarters are located outside wild river areas. Simple comfort and convenience facilities such as toilets, tables, fireplaces, shelters, and refuse containers may be provided as necessary within the river area. These should harmonize with the surroundings. Unobtrusive hiking and horseback riding trail bridges could be allowed on tributaries but would not normally cross the designed river.

7. **Public Use and Access:** Recreation use including, but not limited to, hiking, fishing, and boating is encouraged in wild river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance wild river values.

8. **Rights-of-Way:** New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimized adverse effects on wild river area related values and fully evaluated during the site selection process.

9. **Motorized Travel:** Motorized travel on land or water could be permitted but it is generally not compatible with this river classification. Normally, motorized use will be prohibited in a wild river area. Prescriptions for management of motorized use may allow for search and rescue and other emergency situations.

II. Scenic Rivers

A. **Management Objective:** Management of scenic river areas should maintain and provide outdoor recreation opportunities in a near-natural setting. The basic distinctions between a "wild" and a "scenic" river area are the degree of development, types of land use, and road accessibility. In general, a wide range of agricultural, water management, silvicultural, and other practices could be compatible with scenic river values, providing such practices are carried on in such a way that there is no substantial adverse effect on the river and its immediate environment.

B. **Management Standards:** The same considerations set forth for wild river areas should be considered, except that motorized vehicle use may, in some cases, be appropriate and that development of larger scale public-use facilities within the river area, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters would be compatible if such facilities were screened from the river. The following program management standards apply.

1. **Forest Practices:** Silvicultural practices including timber harvesting could be allowed provided that such practices are carried on in such a way that there is no substantial adverse effect on the river and its immediate environment. The river area should be maintained in its near-natural condition. Timber outside the boundary, but within the visual seen area, should be managed and harvested in a manner which provides special emphasis on visual quality. Preferably, reestablishment of tree cover would be through natural revegetation. Cutting of dead and down materials for fuelwood should be limited. Where necessary, restrictions on use of wood for fuel may be prescribed.

2. **Water Quality:** Water quality will be maintained or improved to meet Federal criteria or federally approved State standards. (River management plans shall prescribe a process for monitoring water quality on continuing basis.)

3. **Hydroelectric Power and Water Resource Development:** No development of hydroelectric power facilities would be permitted. Flood-control dams and levees would be prohibited. All water supply dams and major diversions are prohibited. Maintenance of existing facilities and construction of some new structures would be permitted provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

4. **Mining:** Subject to existing regulations (e.g., 43 CFR 3809) and any future regulations that the Secretary of the Interior may prescribe to protect the values of rivers included in the National System, new mining claims are allowed and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation and pollution, and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the scenic river area boundary can be patented only as to the mineral estate and not the surface estate.

5. **Road and Trail Construction:** Roads or trails may occasionally bridge the river area and short stretches of conspicuous or long stretches of inconspicuous and well-screened roads could be allowed. Maintenance of existing roads and trails, and any new roads or trails, will be based on the type of use for which the roads/trails are constructed and the type of use that will occur in the river area.

6. **Agricultural Practices and Livestock Grazing:** In comparison to wild river areas, a wider range of agricultural and livestock grazing uses is permitted to the extent currently practiced. Row crops are not considered as an intrusion of the "largely primitive" nature of scenic corridors as long as there is not a substantial adverse effect on the natural-like appearance of the river area.

7. **Recreation Facilities:** Larger scale public-use facilities, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters are allowed if such facilities are screened from the river.

8. **Public Use and Access:** Recreation use including, but not limited to; hiking, fishing, hunting, and boating is encouraged in scenic river areas to the extent consistent

with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance scenic river values.

9. **Rights-of-Way:** New transmission lines, natural gas lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on scenic river area related values and fully evaluated during the site selection process.

10. **Motorized Travel:** Motorized travel on land or water may be permitted, prohibited, or restricted to protect river values. Prescriptions for management of motorized use may allow for search and rescue and other emergency situations.

III. Recreational River Areas

A. **Management Objective:** Management of recreational river areas should give primary emphasis to protecting the values which make it outstandingly remarkable while providing river-related outdoor recreation opportunities in a recreational setting. Management of recreational river areas should maintain and provide outdoor recreation opportunities. The basic distinctions between a "scenic" and a "recreational" river area are the degree of access, extent of shoreline development, historical impoundment or diversion, and types of land use. In general, a wide range of agricultural, water management, silvicultural, and other practices are compatible with recreational river values, providing such practices are carried on in such a way that there is no substantial adverse effect on the river and its immediate environment.

B. **Management Standards:** Recreation facilities may be established in proximity to the river, although recreational river classification does not require extensive recreational development. Recreational facilities may still be kept to a minimum, with visitor services provided outside the river area. Future construction of impoundments, diversions, straightening, riprapping, and other modification of the waterway or adjacent lands would not be permitted except in instances where such developments would not have a direct and adverse effect on the river and its immediate environment. The following program management standards apply.

1. **Forestry Practices:** Forestry practices including timber harvesting would be allowed under standard restrictions to avoid adverse effects on the river environment and its associated values.

2. **Water Quality:** Water quality will be maintained or improved to meet Federal criteria or federally approved State standards. (River management plans shall prescribe a process for monitoring water quality on a continuing basis.)

3. **Hydroelectric Power and Water Resource Development:** No development of hydroelectric power facilities would be permitted. Existing low dams, diversion works, rip rap, and other minor structures may be maintained provided the waterway remains

generally natural in appearance. New structures may be allowed provided that the area remains generally natural in appearance and the structures harmonize with the surrounding environment. 4. Mining: Subject to existing regulations (e.g., 43 CFR 3809) and any future regulations that the Secretary of the Interior may prescribe to protect values of rivers included in the National System, new mining claims are allowed and existing operations are allowed to continue. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation and pollution, and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the recreational river area boundary can be patented only as to the mineral estate and not the surface estate.

5. **Road and Trail Construction:** Existing parallel roads can be maintained on one or both river banks. There can be several bridge crossings and numerous river access points. Roads, trails, and visitor areas must conform to construction and maintenance standards and be free of recognized hazards.

6. **Agricultural Practices and Livestock Grazing:** In comparison to scenic river areas, lands may be managed for a full range of agriculture and livestock grazing uses, consistent with current practices.

7. **Recreation Facilities:** Interpretive centers, administrative headquarters, campgrounds, and picnic areas may be established in proximity to the river. However, recreational classification does not require extensive recreation development.

8. **Public Use and Access:** Recreation use including, but not limited to, hiking, fishing, hunting, and boating is encouraged in recreational river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreational river values. Any new structures must meet established safety and health standards or in their absence be free of any recognized hazard.

9. **Rights-of-Way:** New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders and laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on recreational river area related values and fully evaluated during the site selection process.

10. **Motorized Travel:** Motorized travel on land will generally be permitted, on existing roads. Controls will usually be similar to that of surrounding lands. Motorized travel on water will be in accordance with existing regulations or restrictions.

IV. Management Objectives Common to Wild, Scenic, and Recreation Rivers

A. **Fire Protection and Suppression:** Management and suppression of fires within a designated river area will be carried out in a manner compatible with contiguous Federal lands. On wildfires, suppression methods will be used that minimize long term impacts on the river and

river area. Presuppression and prevention activities will be conducted in a manner which reflects management objectives for the specific river segment. Prescribed fire may be used to maintain or restore ecological condition or meet objectives of the river plan.

B. **Insects, Diseases, and Noxious Weeds:** The control of forest and rangeland pests, diseases, and noxious weed infestations will be carried out in a manner compatible with the intent of the Act and management objectives of contiguous Federal lands.

C. **Cultural Resources:** Historic prehistoric resource sites will be identified, evaluated and protected in a manner compatible with the management objectives of the river and in accordance with applicable regulations and policies. Where appropriate, historic or prehistoric sites will be stabilized, enhanced, and interpreted.

D. **Fish and Wildlife Habitat Improvement:** The construction and maintenance of minor structures for the protection, conservation, rehabilitation or enhancement of fish and wildlife habitat are acceptable provided they do not affect the free flowing characteristics of the river, are compatible with the classification, that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

E. **Water Rights:** In the process of evaluating river segments, authorizing officials are held to established principles of law with respect to water rights. Under provisions of Section 13 of the Act, as well as other statutes, river studies shall not interfere (except for licenses under Sec. 7(b) of the Act, pertaining to Sec. 5(a) WSR river studies) with existing rights, including the right of access, with respect to the beds of navigable streams, tributaries, or river segments. In addition, under the Federal Land Policy and Management Act and Federal Power Act, the BLM has permitting and conditioning authorities for any proposed projects which might be incompatible with any river or other identified resource values.

ASSESSMENT PROCESS FOR WILD AND SCENIC RIVERS

The review of wild and scenic values within the Northeast NPR-A Planning Area is being completed using a three-step planning process.

Step 1—Identification. The Wild and Scenic Rivers Act (WSRA) defines a river as "a flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, stream, runs, kills, rills, and small lakes." Ordinarily, if a river or river segment is identified in an official publication or list of another agency or recognized river support organization, and if BLM-administered lands are located within a quarter of a mile of the identified river's ordinary high-water mark, a case can be made to select it for consideration. Additionally, criteria used in the 1978 105(c) studies supplemented BLM's identification process. The BLM identified 18 rivers in the planning area for evaluation in this IAP/EIS.

Step 2—Eligibility Determination. Each identified river segment must be evaluated to determine whether or not it is eligible for inclusion in the Wild and Scenic River System (WSRS). To be eligible, a river segment must be "free-flowing" and must possess at least one "outstandingly remarkable value."

1. ***Free Flowing*****:** Free flowing is defined by Section 16(b) of the WSRA as "existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway."

2. ***Outstandingly Remarkable Values*****:** Section 1(b) of the WSRA requires that for a river segment to be eligible for inclusion in the WSRS, it must possess one or more of the following outstandingly remarkable values: scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.

Based on these criteria, the Colville River has been determined to be eligible for inclusion in the WSRS.

Step 3—Suitability Analysis. Based on the public comments received during the Draft IAP/EIS comment period, BLM will further evaluate the Colville River to determine whether it would be suitable for inclusion in the WSRS. The factors considered in a suitability determination are based on Section 4(a) of the WSRA and are elaborated on in Bureau Manual 8351A. These factors are:

1. Characteristics that do or do not make the area worthy of addition to the WSRS;

2. Land ownership and associated or incompatible uses. The Bureau Manual states that: "In situations where there is limited public lands administered by the BLM. . .it may be difficult to ensure. . .outstandingly remarkable values could be properly maintained. . .. Accordingly, for those situations where the BLM is unable to protect or maintain any identified outstandingly remarkable values, or through other mechanisms (existing or potential), river segments may be determined suitable only if the entity with land use planning responsibility supports the finding and commits to assisting the BLM in protecting the identified river values." The Manual goes on

to state that: ". . .there might be existing or future opportunities for the BLM to acquire river shoreline or where landowners are willing to donate, exchange, transfer, assign, sell, or sign an easement";

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed in the area were included in the WSRS, and the values that could be foreclosed or diminished if the area is not protected as part of the WSRS;

4. Interest in designation or nondesignation, including the extent to which the administration of the river, including the costs thereof, may be shared by State, local, or other agencies or individuals;

5. Estimated costs of acquiring lands, interests in lands, and administering the area if it is added to the WSRS; and

6. The ability of the BLM to manage and/or protect the river area as a wild and scenic river, or other mechanisms (existing and potential) to protect identified values other than wild and scenic river designation.

A finding of nonsuitability may be based on one or a combination of these factors.

Boundary Identification: The final boundary determination generally is completed in the river management plan, which must be completed within 3 years of designation. A corridor boundary area extends the length of the identified river segment and includes the river area, its immediate environment, and lands within an average of half a mile (no more than 640 acres per river mile) of ordinary high water on each bank.

APPENDIX H

Visual Resource Management

VISUAL RESOURCE MANAGEMENT

Definition: The Visual Resource Management (VRM) classes are used to define minimum management objectives. Each class describes a different degree of modification allowed in the basic elements of the landscape and still retain the character of the landscape.

The VRM classes are defined by three factors: (1) scenic quality, (2) visual sensitivity, and (3) distance zones. The classes are then used as the basis for the following objectives: (1) enhancement, (2) rehabilitation, and (3) protection. Finally, these objectives become program outlines for resource planning and project design.

Resource Management Classes:

Class I—This class provides primarily for natural ecological changes and does not preclude very limited management activity. Any contrast created within the characteristic landscape must not attract attention. This class is applied to wilderness areas, wild and scenic rivers, and other similar situations.

Class II—Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape. The contrast may be seen but must not attract attention.

Class III—Contrasts to the basic elements (form, line, color, texture) caused by a management activity may be evident and begin to attract attention but should remain subordinate to the existing landscape.

Class IV—Contrast may attract attention and be a dominant feature of the landscape in terms of scale but should repeat the form, line, color, and texture of the characteristic landscape.

Class V—Change is needed or change may add acceptable visual variety to an area. This class applies to areas where the natural character has been disturbed to a point where rehabilitation is needed to bring it back into character with the surrounding landscape. This class would apply to areas identified in the scenic evaluation where the quality of the class has been reduced because of unacceptable cultural modification.

Design Techniques for Mitigating Visual Impacts:

A. Landform/Waterbody

1. Reduce the size of cut and fill slopes. Consider:

   (a) Relocating to an area with less slope.
   (b) Changing road width, grade, etc.
   (c) Changing alignment to follow existing grades.
   (d) Prohibiting dumping of excess material on downhill slopes.

2. Reduce earthwork contrasts. Consider:

   (a) Rounding and/or warping slopes.
   (b) Retaining rocks, trees, drainages, etc.
   (c) Toning down freshly broken rock faces with asphalt-emulsion spray or with gray paint.
   (d) Adding mulch, hydromulch, or topsoil.
   (e) Shaping cuts and fills to appear as natural forms.
   (f) Cutting rock areas so forms are irregular.
   (g) Designing to take advantage of natural screens (i.e., vegetation, landforms).
   (h) Grass seeding of cuts and fills.

3. Maintain the integrity of topographic units. Consider:

   (a) Locating projects away from prominent topographic features.
   (b) Designing projects to blend with topographic forms in shape and placement.

B. Vegetation

1. Retain existing vegetation. Consider:

   (a) Using retaining walls on fill slopes.
   (b) Reducing surface disturbance.
   (c) Protecting roots from damage during excavations.

2. Enhance revegetation. Consider:

   (a) Mulching cleared areas.
   (b) Controlling planting times.
   (c) Furrowing slopes.
   (d) Planting holes on cut/fill slopes.
   (e) Choosing native plant species.
   (f) Stockpiling and reusing topsoil.
   (g) Fertilizing, mulching, and watering vegetation.

3. Minimize impact on existing vegetation. Consider:

   (a) Partial cut instead of clearcut.
   (b) Using irregular clearing shapes.
   (c) Feathering/thinning edges.
   (d) Disposing of all slash.
   (e) Controlling construction access.
   (f) Utilizing existing roads.
   (g) Limiting work within construction area.
   (h) Selecting type of equipment to be used.
   (i) Minimizing clearing size (i.e., strip only where necessary).
   (j) Grass seeding of cleared areas.

4. Maintain the integrity of vegetative units. Consider:

   (a) Utilizing the edge effect for structure placement along natural vegetative breaks.

C. Structures

1. Minimize the number of visual structures.

2. Minimize structure contrast. Consider:

   (a) Using earthtone paints and stains.
   (b) Using cor-ten steel (self-weathering).
   (c) Treating wood for self-weathering.
   (d) Using natural stone surfaces.
   (e) Burying all or part of the structure.
   (f) Selecting paint finishes with low levels of reflectivity (i.e., flat or semigloss).

3. Redesign structures that do not blend/fit in. Consider:

(a) Using rustic designs and native building materials.
(b) Using natural-appearing forms t complement landscape character (use special designs only as a last resort).
(c) Relocating structure.

4. Minimize impact of utility crossing. Consider:

(a) Making crossings at right angles.
(b) Setting back structures at a maximum distance from the crossing.
(c) Leaving vegetation along the roadside.
(d) Minimizing view time.
(e) Utilizing natural screening.
(f) Relocating structure.

5. Recognize the value and limitations of color. Consider:

(a) That color (hue) is most effective within 1,000 feet. Beyond that point, color becomes more difficult to distinguish and tone or value determines visibility and resulting visual contrast.
(b) That using color has limited effectiveness in the structures that are silhouetted against the sky.
(c) Painting structures somewhat darker than the adjacent landscape to compensate for the effects of shade and shadow.
(d) Selecting color to blend with the land and not the sky.

APPENDIX I

The Inupiat People's History and Future with regard to the National Petroleum Reserve-Alaska (NPR-A) A 1997 Perspective from the North Slope Borough

The Inupiat People's History and Future
with regard to the National Petroleum Reserve-Alaska (NPR-A)
A 1997 Perspective from the North Slope Borough

During this period of renewed national interest in the area, it is important to consider the perspective of the Inupiat Eskimo, the people who live within the boundaries of the 23.7 million acre National Petroleum Reserve-Alaska (NPR-A).

The North Slope Borough, the local home rule body which governs the area in which NPR-A is located, appreciates the opportunity to speak on behalf of its citizens in this IAP/DEIS.
The Borough government represents the 6,000 residents of America's northern most region, who are predominately Inupiat Eskimo and who unquestionably will be impacted most immediately by management decisions and the various activities discussed in this draft EIS.

Federal agencies engaged in preparing the DEIS address significant issues which are related to NPR-A's lands, to the Inupiat people's use of these lands and the fish and wildlife, to our people's subsistence way of life and to their future. Similarly, the future of our subsistence uses and relationships between the land, our culture and tradition and our people have implications for the NPR-A leasing and land management policy which the DEIS is addressing.

The NSB offers these facts and views to other citizens interested in NPR-A because, like other Americans, the Inupiat are concerned about things that happen in our home and "neighborhood", the NPR-A.

Reviewing this document will provide the public and responsible decision-makers a local perspective on the special concerns of the North Slope residents who want to continue our life there forever. Decisions about management, recreation and oil leases must be based on full knowledge of the Eskimo people's historic and current uses and interests, with an eye toward the future and avoiding needless conflicts.

This Statement of Additional Views is intended to give voice to the Inupiat Eskimo people who live in Arctic Alaska. This is their statement, organized simply as follows:

1. Inupiat history and current use in the NPR-A area.

2. Recent history of land selections in the U.S. (Alaska) Arctic

3. Conclusion and essential elements of a NSB-preferred final EIS alternative

1. Inupiat history and current use in the NPR-A area.

The Inupiat people have lived and subsisted in the Arctic for centuries and continue to do so today, and plan to do so for the foreseeable future. This the Inupiat people want to be known, first and foremost.

The Inupiat people's continuous and unbroken use of the entire 23.7 million acre NPR-A and its 4.6 million acre northeastern study area predates by centuries any occupation or claim by others and any land ownership designation in the region.

The Inupiat Eskimo people have roamed the vast Alaska Arctic for thousands of years, catching fish and game, settling and camping according to the seasons and the abundance of wildlife. Much of the activity took place along the coast and rivers, but inland travel was common, with rivers serving as "highways" when overland or ocean travel was not preferred. Seasonal camp shelters, rest areas and supply caches, ice cellars for storage and small dwellings are spread across the Arctic still to support safe long-distance travel in the extreme Arctic conditions.

Traditional land use sites and primitive infrastructure were, and still are, shared by extended families, hunting partners, whaling crew members and other friends and occasional strangers. The responsibility for these sites continues to be passed on to successive generations as younger people are taught by their elders the detailed patterns of the area's resources, Arctic survival lessons and most importantly, the Inupiat way of life, *Inuuniagniq* -- subsistence.

Today, in the remote Arctic, "bush villages" have evolved, with airports the main transportation facility. On the North Slope, some settlements still have "honey bucket" waste systems with limited potable water. Other villages are more modern than others with electricity, safe drinking water and even some flush toilets in the more intensely-settled communities. Barrow is the largest village, serving as the regional service center for the whole North Slope, containing half the population and the North Slope Borough government headquarters.

Still, in 1997, four of the eight villages in the Borough, namely Nuiqsut, Barrow, Wainwright and Atqasuk, remain surrounded by NPR-A boundaries. The other four other established villages are Point Hope, Point Lay, Kaktovik (Barter Island) and Anaktuvuk Pass. Point Lay and Anaktuvuk Pass have subsistence relationships within the NPR-A area, and hunt many of the same migratory species which roam the vast North Slope.

Wherever the animals and fish go, that is where you will find the Inupiat living to hunt and fish. To the Inupiat, NPR-A and other federal boundaries seem artificial, but the people have learned to co-exist with them.

2. Recent history of land selections in the U.S. (Alaska) Arctic

A review of the lands history involving the Arctic shows how North Slope lands were progressively withdrawn from selection by the NSB government and by Inupiat people and their village and regional corporations, even though each entity consistently expressed its desire to select lands within the NPR-A (and other federal Arctic areas) under municipal or native entitlement.

Much of this history was marked by federal actions such as a new administrative designation of two "Special Areas" within the NPR-A for example, without attending first to the rights of the Inupiat people who live there.

Lands available for Inupiat selection were severely limited by prior state and federal government selection, without regard to Inupiat use of or their aboriginal title to the land. The remaining land in many cases was not useful for historic or future needs.

In summary:

1923 An Executive Order #3234 by President Harding designates 23.7 million acres of the western Arctic as the Naval Petroleum Reserve No. 4 – or PET 4.

1959 Alaska accepts statehood with a 102 million acre land entitlement which includes much of the remaining central Arctic where the giant Prudhoe Bay oilfield is discovered ten years later, also removing it from Inupiat selection.

1960 8.9 million acres of the eastern Arctic are withdrawn for the Arctic National Wildlife Range, adjacent to the Inupiat community of Kaktovik.

1971 The Alaska Native Claims Settlement Act (ANCSA) created 13 regional corporations and allowed for a total native lands settlement of 44 million acres, but only in areas <u>not</u> already federally-designated or in some cases, state-selected.

Arctic Slope Regional Corporation (ASRC), the North Slope regional corporation, was denied its subsurface selection rights within NPR-A as a result, with villages given limited surface selection in the petroleum reserve.

1976 The Naval Petroleum Reserves Production Act (NPRPA) re-names PET 4 the National Petroleum Reserve-Alaska (NPR-A) and puts it under the Department of Interior jurisdiction.

1980 The Alaska National Interest Lands Conservation Act (ANILCA) expands and creates refuges, new parks and preserves which further divide the Inupiat traditional homeland into restrictive conservation units, including designated Wilderness.

1997 Secretary Babbitt visits the North Slope people, including a visit to a subsistence hunting and fishing camp and promises the Inupiat residents he will "not perpetuate 500 years of separating people from the land."

3. Conclusion and essential elements of a NSB-preferred final EIS alternative

The Inupiat people heard and believed Secretary Babbitt as he spoke.

During this latest renewal of national interest in NPR-A, the Inupiat people believe that the federal government should address and resolve outstanding land issues with the Native people who live there. This should happen before, or concurrent with, oil and gas leasing, or any other special designations in the NPR-A.

The North Slope Borough, ASRC and the village and tribal governments of the North Slope have all recommended land settlement proposals, exchanges and other options to give the Inupiat legally-recognized access and title to their traditional land use sites. This issue remains a major element of a North Slope Borough preferred alternative. Nothing in this DEIS precludes addressing this range of issues before creating a new set of intervening third party legal rights in the form of oil and gas leases or special designations.

The North Slope Borough is on record strongly opposed to any alternative or mix of alternatives which involve additional withdrawals or designations which prevent subsistence activity or properly-regulated oil and gas development in NPR-A or the Planning Area.

Of paramount concern to the NSB is the guaranteed and perpetual use, both individual and communal, of the land in NPR-A for the people who have always lived there. Unresolved land issues must be a priority undertaking.

The land and the Inupiat life are inseparable. The land and sea are the source of the Inupiat food and culture. Even so, the Inupiat have accommodated federal agency management, seismic surveys, film crews, recreational adventurers, oil and gas exploration, scientists of all types and now the potential for new leasehold interest in these lands, with development certain to come if commercial discoveries are made.

If the government does not deal with the issue of communal use of land for cultural purposes, traditional land use and more modern future uses in a way that allows the Inupiat lifestyle to flourish, then the federal government will have failed the Inupiat people in the process.

Thank you for listening to and learning from the residents of the North Slope.

For more information on the North Slope and its people, please contact:

Mayor Ben Nageak

Public Information on NPR-A

Box 69

Barrow, AK 99723

APPENDIX J

Draft IAP/EIS Commenters

The following table lists the comments on the Northeast NPR-A Draft IAP\EIS. Identical letters and postcards received a single number. In cases where there were numerous (more than a half dozen) identical comments, names of the commenters are not provided. For example, see Comment Numbers 12 and 22. We extend our apologies to those whose names we may have misread.

Table J-1
Providers of Written Comments on the NE NPR-A IAP\EIS

1	David Peterson	44	Sigrid Hannah Mabel	87	Ann L. Newbury
2	Ron and Bonnie Wendt	45	Sruti Bhaumik	88	Mike and Diane Frank
3	Todd Bear	46	Constantina Economou	89	Martha Jokela
4	Troy Reinheart	47	Preston Motes	90	D. Caldwell Jones
5	James N. Stephens	48	Broward Co. Audubon Society	91	Donald C. Jones
6	Barry Moore	49	Ladd Coates	92	Pat Henry
7	Jeff Behan	50	Helene and Charles Riley	93	William Stivers
8	Mark Nielson	51	Lester Wood	94	Constance Wolfe
9	Doug La Follette	52	Sarah P. Faulconer	95	Sally Bostwick
10	Tim Saunders	53	Dan Bogan	96	Dan Fleming
11	Thomas J. Classen	54	Sarah H. Gerrish	97	James M. Byrnes
12	Postcard Mail-in (Audubon Society)	55	Postcard Mail-in (Alaska Center for the Environment/Sierra Club)	98	Sandra Arnold
13	F. Robert Bell and Assoc.	56	John Spezia	99	Rachel Gernat
14	Hans Johnson	57	Marc Massengale	100	Elizabeth McNeill
15	Susan E. Cox	58	Francis L. Daggett	101	Sarah Ramuglia
16	Susan Zwinger	59	Sanibel-Captiva Audubon Society	102	Tony Slatonbarker
17	Jean Miller	60	Scott Bailey	103	Bernard J. Kikta
18	Mr. and Mrs. Todd D. Peter	61	Timothy Byers	104	Gerald R. Brookman
19	DuPage Audubon Society	62	Chris S. Stevens	105	Stanley Schoening
20	June Ringer	63	Coastal Encounters Nature Center	106	Arctic Slope Regional Corporation
21	Bert Charest	64	Ventura Audubon Society	107	Wildlife Management Institute
22	Mail-in campaign	65	Erik Forburger and Janet Scott	108	Daniel Nelson
23	Oscar Frank, Jr.	66	Anna Peterson	109	Gail N. Ryba
24	Olga M. Rosche	67	Sherri Schelk	110	Graydon Dill
25	Marcus Olson	68	Herbert J. Mason	111	Stephen Booth, Jr.
26	Dave Bordenkircher	69	Sharon L. Sorby and Guy Larson	112	Gary D. Rainville
27	Alan and Monica Gregory	70	Howard Whitaker	113	Bill Anelli
28	Gary Simpson	71	Harvey Broome Group, Sierra Club	114	Suzanne Menghraj
29	Vivian C. Menaker	72	Doug La Follette	115	Terry Cummings
30	Wendy Schorr	73	Tennessee Forest Defence Council	116	Sarah Bontempl
31	Barbara A. Lund	74	Stephen and Bronwyn Schweigerdt	117	Eugene Harrison
32	Armand R. LaPalme	75	Green Mountain Forest Watch	118	Nancy Waterman
33	Peter Zadis	76	Peter Berger	119	Mr. and Mrs. Donald S. Teague
34	Jack Biscoe	77	Deborah O. Rush	120	Dr. Sandra Vaisvil
35	June Ringer	78	D. J. Champagne	121	Elizabeth A. Blassingham
36	William L. Groth, Jr.	79	Margaret A. Sewall	122	Dan Dumont
37	Ray Payne	80	Katherine Delanoy	123	Dona Feaster
38	Ron Frankiewicz	81	Ron Bennett	124	Wolf Lutton
39	Inupiat Community of the Arctic Slope	82	Hans Detweiler	125	Sarah Swift Masterman
40	Deborah O. Rush	83	Larry E. Moss	126	Charlene Whiting
41	Jess Kuntz	84	Tom Sewell	127	Preston M. Motes III
42	Rick Shattuck	85	Sam Booher	128	Jane Adams
43	Sunil V. Somalwar	86	Jay Stange	129	Linda J. Bassi

130	Jeffery M. Watt	174	Shelsea L. Strutz	218	Helen Drury
131	Brian Keane	175	Lynn McQuillen	219	M. Ruth Niswander
132	South-Central Timber Development, Inc.	176	Robert Huebner	220	M. Ruth Niswander
133	Jim Carsella	177	Stephanie Fisk	221	Doug Torelle
134	Georgia K. Lozinsky	178	Larry Crenshaw	222	Quittapahilla Audubon Society
135	Jim Levine	179	Jodi Cosper	223	Glenn O. Martinson
136	Sara McCuistion	180	Jeremy Sheaffer	224	Gordon Bloom
137	Chris Henningsen	181	Lesli Corthell, Robert Dolan	225	Anne Brooke
138	Brenden Yakoubian	182	Bob Brister	226	Richard J. Gordon
139	Kanikku Bioregional Council	183	David Neary Cernicek	227	Mark Levensky
140	Matt Kinney	184	Dave and Cathy Lueders	228	J. Cass
141	Stephanie Snider	185	Muriel Grim	229	Marvin O. Wright
142	George Chailos	186	John Hagberg	230	Alaska Air Carriers Association
143	Mike Simmons	187	Concerned Friends of Ferry Co.	231	Associated General Contractors of Alaska
144	Barbara and Michael Naughton	188	Dan Przywojski	232	Petro Marine Services
145	Jeremy Schreifels	189	Ian Anderson	233	Keith L. Lindse
146	Denise Joines	190	Eugene A. Schubert	234	John Merrick
147	Christine Reilly	191	Siksik Foundation	235	Randy Carter
148	Joe Hickey	192	David Lacey	236	Arctic Power
149	Andrew Raichle	193	Alan Shurman	237	Leah R. Karpen
150	David McCabe	194	James F. Lipman	238	Linda Hoagland
151	J. T. Bass	195	Ann Leonard	239	Peter Schurman
152	Mr. and Mrs. Robert Anderlik	196	Robin Mower	240	Voice of the Environment
153	David M. McCahon	197	Andrea Esser	241	Melinda Stucker
154	Anita Johnson	198	Mark Madden	242	John Maroney
155	Phil Rothschild	199	Debra Lynn Gore	243	Paddock & Mastin
156	Marilyn Dinger	200	Ian Hallett	244	Jimmy Orth
157	Monica DuClaud	201	Walter Cook	245	David Shettleroe
158	Thomas J. Classen	202	Ted Webb	246	Frank Keim
159	Eleanor-Ann Davis	203	James S. Wadell	247	Jen Brock
160	Carmen T. Santasania	204	Tim Holy	248	Paul Carlton
161	Brian O'Donnell	205	Lee Daniels	249	Marilyn Dinger
162	Arthur Schmidt	206	Robert Franz	250	Jackie Juliana and Paul Levine
163	Jennifer L. Guesquierre	207	James Grotha	251	Sherry L. Dixon, Heidi Most, Kent H. Buhl
164	Anne M. O. Geloran	208	Andrea Bauch	252	Mr. and Mrs. Arthur Morley
165	Barrito Floore	209	Todd Bauch	253	Bill Barnes
166	Aaron Draven	210	Richard Stellner	254	Weaver Bros., Inc.
167	Steve Jambeck	211	Bethany M. Holmes	255	Jill M. Johnson
168	Mary Adams	212	Christopher Daley	256	Ross A. Coen
169	Miriam Rosenblum	213	Louie Kroll	257	Robert E. Johnston
170	Georgia Chapter Sierra Club	214	Jeff Fellas	258	Frank Olsen
171	Heather Wheeler	215	Joanna Phillips	259	David A. Pisaneschi,
172	Gaston Nichols	216	Don Pendergrast	260	Anne Sellers
173	Tony R. Kretz	217	Tracie Batson Pendergrast	261	Alexandra L. Davis and Marty Colon

262	Shan Collins	305	Fred Beddall	348	Patricia Blank
263	Postcard Mail-in (Wilderness Society/Alaska Wilderness League)	306	Sal Campagna	349	William L. Canada
264	Irv Ackerman	307	Aaron Mitchell	350	Elizabeth F. Elsner
265	Form letter mail-in (Pro-Development)	308	Larry and Gimone Hall	351	Edward Hakala
266	Form letter mail-in (Pro-Development)	309	San Diego Audubon Society	352	R. M. Jens
267	Form letter mail-in (Pro-Development)	310	LeAnn Whetstone	353	Wilbur Green
268	Form letter mail-in (Pro-Development)	311	Karen Jettmar	354	Mark Sutherlin
269	Form letter mail-in (Pro-Development)	312	Brian Keane	355	B. Morse
270	Form letter mail-in (Pro-Development)	313	Gerald R. Brookman	356	Jan Konigsberg
271	Form letter mail-in (Pro-Development)	314	Dorothy Boynton	357	CarolAnne Chesitis
272	Form letter mail-in (Pro-Development)	315	Friends of the Nescopeck	358	Joel Kuperberg
273	Form letter mail-in (Pro-Development)	316	Alan Orvis	359	Corrie E. Bates
274	Form letter mail-in (Pro-Development)	317	Daniel Schmitt	360	David Crouch
275	Form letter mail-in (Pro-Development)	318	Callie Jordan	361	Dorothy Boynton
276	Form letter mail-in (Pro-Development)	319	Michele Sooy	362	Nils P. Sara
277	Sen. Dave Donley	320	Kurt D. Pluntke	363	Ian Walton
278	Andre Bouchard	321	John R. Swanson	364	Loretta and Cliff Low
279	Donna Lanciotte	322	Art and Ruth Riffenburgh	365	Anneloulse Jones
280	Gladys Benson	323	West Michigan Environmental Action Council	366	Randal L. Owens
281	Kenneth R. Niswander	324	Gary J. Green	367	Rosalind Dobkins
282	North Star Terminal and Stevedore Co.	325	Rick Rogers	368	Mike Schut
283	George R. Schmidt	326	Ann Owens	369	Elizabeth Anne Booth
284	Ann M. Throckmorton	327	Steitz Family	370	Carol Kleckner
285	Jennifer Lyons	328	Michael McPhail	371	Phillips Petroleum Company
286	Corrie E. Bates, Donald H. Kern	329	Nick [no full name provided]	372	Deloitte & Touche LLP
287	John Metzger	330	John Dennehy	373	Edna Plikerd
288	Daniel W. Semler	331	David Lien	374	Richard L. Marks
289	David Wilmot	332	R. Kiffen Hope	375	Alan J. Shurman
290	Clarence Petty	333	Voice of Wildlife	376	Charles Newman
291	Karen P. Thomas	334	Ohio Sierra Club	377	J. Barbosa
292	Steve and Bronwyn Schweigerdt	335	Thomas Tereszkiewicz	378	Adam Miner
293	Bill and Marilyn Voorhies	336	Ellamae Jurgens, Marsha Jurgens-Harris, Craig Harris	379	Allen C. Bourne
294	Alexander Roth	337	Robert DeWolfe	380	Chris Case
295	Sharon Stroble	338	Warren C. Christianson	381	E. Neil MacKinnon
296	Robert Gold	339	Dan Hart	382	Kimberly Mattson Hansen
297	Dexter Hake	340	Karen Meyers	383	Ken Maloney and Julie Ford-Maloney
298	Gaston Nichols	341	Mary Cox	384	Diane Murray
299	Steven D. Eyer	342	Nicholas Winstead	385	Mil Kinsella-Sullivan
300	Jerry Jacobs	343	Jim Steitz	386	American Council for an Energy-Efficient Economy
301	Jake Schutt	344	Tammy R. Mose	387	Jay M. Uland
302	Theis Research & Engineering LLC	345	Cynthia Collingwood	388	Wendell Funk
303	Rafael Flores	346	Caroline Garland	389	Linda Chivers
304	Mark McCaustland	347	Paddy Tatum	390	John and Camille Holzheimer

391	Jim Yarbrough	434	Kenneth H. Duncan	477	Lynn Larsen
392	Joe Gastl	435	R. A. Vandergrift	478	Delaware-Otsego Audubon Society, Inc.
393	National Audubon Society, Aullwood Audubon Center & Farm	436	Diane and John P. Koenig	479	Quinn Radford
394	Rick Steiner	437	Robert E. Howe	480	Jeanne Norrgard
395	Tim Kardatzke, Kyle & Brett Joly, Sherrill Blodget, and Joseph A. Bishop	438	Elsie M. Wiedner	481	Chriss Scheller
396	David Zimmerman	439	Ray Products Incorporated	482	Suzanne H. Williams
397	Paul Lindholdt	440	Carol Rall	483	Donald C. Autry
398	Eric B. Snyder	441	Chequamegon Audubon Society	484	Louise W. Fabryklewicz
399	Kathy Kuyper	442	Peter Zadis	485	L. Betts
400	Larry E. Moss	443	Mark Lovett	486	Adria Lassiter
401	Stacy Hoffman, IL	444	Richard J. Sailors	487	Lisa K. Kleves
402	Marty Steitz	445	Billy E. Butts	488	Caesara [only partial name provided]
403	Rodney E. Parlee	446	Grant E. M. Matheke	489	D. Minkler
404	Bruce Rosenwasser	447	Annette Bottaro-Walklet and Keith Walklet	490	Hop K Leihane
405	Dennis McCarthy	448	Michael Robinson	491	Hezzg [only partial name provided]
406	Ryan Hickey, IN	449	Mha Atma Singh Khalsa	492	Elizabeth Bone
407	Jennifer Taylor	450	Maria A. Patten	493	Jennifer Beiczar
408	Joshua Simpson	451	Brenda Corey	494	Scott Anderson
409	Klamath Forest Alliance	452	Ingrid Hogle	495	S. O'Neill
410	Timothy P. Dirkx	453	Rianne Perry	496	Mikail P. Ming
411	John H. Kim, Bradley W. B. Marzullo, Emily Brotherton, Megan E. Cavanaugh	454	Animal Care and Welfare, SPCA	497	L. S. Pralt
412	Elizabeth and Harold Hedelman, S. Hedel	455	John K. Mahon	498	David Sielaff
413	Roger and Judy Anderson	456	Roald Cann	499	B. Edwards
414	Bruce Kube	457	Ann Lott	500	Denise Janeson
415	William R. Corning	458	Howard L. Harris	501	Molly Crowell
416	Karen Biesanz	459	Mark M. Giese	502	T. Tanzaly
417	Chris Merhige	460	Beverly I. Strassmann	503	Robert B. Stone
418	Robert M. Mirabelli	461	Dorothy R. Chandler	504	[illegible]
419	Karin and Thomas Anderson	462	David L. Elmendorf	505	Clinton G [illegible]
420	Michael McNamara	463	Nicholas Winstead	506	Lori Richloff
421	Montana River Action Network	464	Ruth Petranek	507	Ann Middleton
422	Federation of Western Outdoor Clubs	465	Dorothy P. Pineman	508	J. Franlin
423	Mail-in campaign	466	Don Gennero	509	Tess L. Jaderich
424	Katherine Hoak	467	Lynden Logistics	510	M. Ausi [illegible]
425	Helen Schulz	468	Gary D. Gordon	511	Aron Gonza [illegible]
426	Darrell Wells	469	John C. Haas	512	[illegible]
427	Bexar Audubon Society	470	Wendell P. Garton	513	[illegible]
428	Vance W. Handley	471	Chris Scranton	514	Vera Boone
429	Thomas E. Luebben	472	Tom Scribner	515	B. Brasted-Maki
430	Stephanie Smith, Parallel Partners	473	Marjorie Ann Leone	516	Stephen E. Marino
431	William Berley	474	Harold W. Dodgen	517	Deborah Gomez
432	Felicia Merritt	475	Carolyn Cantrell	518	Margaret F. Yawn
433	First Baptist Church	476	Roger L. Duba	519	David Levner

520	Judith Toubes	563	Christine Klein	606	Jay Good
521	Laurie Schimmoeller	564	David C. Houghton	607	Jan Holt
522	Shirley Kovar	565	Patricia A. Henry	608	Allen Karnatz
523	Katharine L. Derge	566	Petition by 25 people, Ft. Collins, CO area	609	Andy Robinson
524	Joe Weaver	567	Robert A. and Dolores T. Lad	610	Joan F. Stickley
525	Susan Cunningham Campbell	568	Mary Blackmore	611	Dorothy Geisler
526	Rita Solow	569	Marjorie, K. Angastiuk	612	Donna Young
527	Bobbie Cohen	570	Julie A. Gifford	613	Margaret Dooley
528	Todd S. Roessler	571	Josh Richards	614	Susan Crampton
529	Sandy Huntzinger	572	Lyle R. Yablonsky	615	Pan O'Neill
530	Sharlene Myers	573	Abby Hoats	616	Bonnie W. Eisenfeld
531	June Kluglein	574	Ronn M. Brourman	617	Jim Ciha
532	Don Andrews	575	Ryan Halter	618	P. Adler
533	Dianna M. Brown	576	Mac E. Wheeler	619	Mark Atkins
534	Donna M. Balkan	577	Bennett Beach	620	Lesse Atkins
535	Roger S. Smith	578	Tim Bristol	621	Eleanor Light
536	Alexander Censor	579	Laurie Hall	622	Robin Rothman
537	Frances M. Perlman	580	Monica Rohde	623	Kenneth D. Johnsen
538	Jules Kurtz	581	Alabama Audubon Council & Alabama Environmental Council	624	Robert S. Thompson
539	Karen Turiel	582	Cynthia Welte	625	Mike Johnson and Karen Briggs
540	Marybeth Holleman	583	William Daily	626	Barbara Stewart
541	Clark Milne	584	John C. Billing	627	Doris L. Fern
542	Natalie Halpin	585	The Hamiltons	628	Patricia Bass
543	Diane Bolte-Silverman, Jay Silverman	586	Constance Philip	629	John Pamperin
544	Merry C. Scandle	587	Meta Heller	630	Ward and Lois Irwin
545	Shekar Chandrasekar	588	Shirley Ann McGrath	631	Denise K. Theodoras
546	Carol H. Cassetti	589	Karen Furnweger	632	Brett Mellintort
547	Georganna Bidlock	590	Charles F Belmont	633	Michelle Cunningham
548	Daniel Vice	591	John J. and Mary Dunn	634	Mark Sturnick
549	Alexander Guyek	592	Malcolm Gillis	635	Elizabeth Tung
550	Peg H. Bachmann	593	James Corcoran	636	Michael A. Mooney
551	Kyle M. Hall	594	Charles E. Clark	637	Franz Baum
552	Kathleen A. and K. W. Nicholson	595	Mike Gracz	638	unsigned
553	Youth Environmental Society, Hopewell Valley Central HS, Pennington, NJ	596	S. Christopher Jacobs	639	Rick King
554	C. Williams	597	Joseph Rueter	640	Kenneth A. Sloane
555	Susan Englehart	598	Edward Loosli	641	Elizabeth M. Wheeler
556	Walter A. Koerber, Jr.	599	Greg Juenemann	642	Verna Wilson
557	Larry and Joyce Henderson	600	John E. Wilder	643	[illegible]
558	Robert J. Greer	601	Barbara E. Kurtz	644	Larry Abers
559	Fred E. Chow	602	Steven Hannon	645	Tad Eareckson
560	Jeff Adams	603	American Rivers	646	Mary K. Byrne
561	Western Ancient Forest Campaign	604	Dan Eidson	647	Aashish Bhimani
562	J. Capozzelli	605	Ann Bullock	648	Andy Foster

649	Roy Vanderleelie	692	Crispin H. Pierce	735	Annette Faurote
650	Deana M. Crumbling	693	Jim Green	736	Ruth Connery
651	Sharon Stroble	694	Rebecca Nisonger	737	San Diego Audubon Society
652	John Joseph Dziak	695	Thomas Tereszkiewicz	738	Natchiq, Inc.
653	Don Crowe	696	Laurie Colton	739	Animal Protection Institute
654	Linda K. Sant'Angelo	697	Chuck Mitchell	740	Linda P. Martineau
655	Christine Champe and Andrew Wilcox	698	Daniel Calnan	741	Timothy A. Ulewicz
656	Catherine C. Resmer, Steven Holt, Kathleen Daly, Tesh Bhattacharya	699	Tammy L. Tribit	742	Betty B. Herder
657	Kit McGinnis and Hugh Deaner	700	Scott R. Anaya	743	Frances Perlman
658	Buck Tilton	701	Florence A. Dickson	744	Robert and Sandy Fursich
659	Darren Pace	702	Eric Reinarman	745	Paul Moss
660	Alaska Instrument Co., Inc.	703	John W. Herberg	746	Shannon Sawdy
661	Sally Huffman	704	Eleni Panagiotaraku	747	Wilma T. Kennell
662	David Naghski	705	Elsa Martz	748	Howard L. Harris
663	James Ellington	706	Tina Farley	749	Tennessee Citizens for Wilderness Planning
664	Natural Resources Mgmt students Rollins College, Winter Park, FL	707	Rachelle L. Coleman	750	John Langan
665	Scott Lehmann	708	Greg Probst	751	Betty Mannlein
666	Nick Nichols	709	Jill K. Cliburn	752	Tollef Monson
667	Clay Venable	710	Linda Bertles	753	Mr. and Mrs. John Hofweber
668	Ivan Rose	711	Newkirk L. Johnson	754	Elisha Mitchell Audubon Society
669	Toby Davidow	712	Barbara Buntin	755	Rachel Boylan
670	Edward E. C. Clebsch	713	Rachel Thomas	756	Lili Lisa Lytle
671	David Holt	714	Samuel R. Rushforth	757	Mr. and Mrs. Richard Keene
672	Mary Briscoe	715	Kris Nelson	758	The Miller Family
673	Donald Bauhs	716	Badreyyah Alireza	759	Mr. and Mrs. Alan Meisel
674	James M. Glennon	717	Steve Paulson	760	Maryland Coalition for Animal Rights
675	drmhowie [e-mail address]	718	Candace Crane	761	Jack Robbins
676	William W. Steibel	719	Terri Tipping and John Enderle	762	Dusty Arnold
677	Jim Collord	720	Heather R. Garland	763	Clifford E. Anderson
678	Lura Weaver	721	no name provided	764	Stephen L. Wallace
679	Michael. A. Brogan	722	Paul Van Steenberghe	765	Great Northwest Inc.
680	Liam Cassidy	723	Herbert E. Harris III	766	Jamie Wright
681	Ted Anderson	724	Michael Weiner	767	John R. E. Bliese
682	Angela Minor	725	Kerry Jackson	768	Kathleen Roberts
683	Zalton [e-mail address]	726	Mark H. Reed	769	Choctawhatchee Audubon Society
684	Whitney McClelland	727	Pool Arctic Alaska	770	Carleton Schaller, Jr.
685	Jonah Busch	728	Klamath Forest Alliance	771	Will and Jane Curtis
686	JmHennig [e-mail address]	729	Petition by 72 people, Sebastapol and elsewhere in CA	772	Virginia Purdy
687	John Stevens	730	Zin Kittredge	773	Pam and Kandy Swedberg
688	Richard L. Hamilton	731	Amy Longo	774	Carol Tanner
689	Gregg M. Wardrip	732	Mr. and Mrs. George Yokoi	775	Tom Evans
690	R. Kiffen Hope	733	Karen M. Fant	776	Robin Rothman
691	Clark A. Buchner	734	Seattle Audubon Society	777	Quittapahilla Audubon Society

778	John R. Swanson	823	Tom Rumpf	868	Patricia Walker
779	Richard L. Marks	824	Bryan Warf	869	Kathleen Anne McMullen
780	Rachel Hein	825	Union Texas Alaska, LLC	870	Arlene and Ross Montgomery
781	Marilyn Cain	826	Steve Robinson	871	William Willers
782	Irene and Steve Pungang	827	Jeffrey R. Bernstein	872	Paul Bosquet
783	Anne Koenig	828	Edward C. Flash	873	Monica Aufrecht
784	Rick Meyers	829	Eric S. Johnson	874	Paul Sieracki
785	Amber Dilger	830	Ellen J. Richardson	875	Alaska Clean Water Alliance
786	Kelly Wilkening	831	David L. Brimberry	876	Citizens League for Environmental Action & Recovery
787	Jeff Hankens	832	Jack Schoop	877	Joanne Vinton
788	Michael R. Pitula	833	Center for Design Studies	878	Maricopa Audubon Society
789	Summer Laws	834	Henry Halama	879	Lori J. Rumpf
790	Dunes-Calumet Audubon Society	835	Cin Greyraven	880	Dave Carlson
791	Tulare County Audubon Society	836	Donald C. and Mary B. Wieckowicz	881	Sharon P. Cavallo
792	Decatur Audubon Society	837	Richard W. Hoffman	882	Frank Han
793	Kathy Anderson	838	Brooke H. Bachmann	883	Heather Cantino
794	Bruce Kube	839	Dean Dougherty	884	Charles Phillips
795	Dorothy Tripp Taylor	840	Linda Kramme	885	Lori Mangan
796	Maxim Kostylev	841	James R. Pool	886	Harvey Broome Group, Sierra Club
797	Richard Saretsky	842	Cathy Yost	887	Mark Newey
798	Tom and Gerry Easton	843	Arnold Talentino	888	Ruth Bernstein Hyman
799	James Gerstley	844	Robert G. Stagman	889	Society for Integrative and Comparative Biology
800	Priscilla Mather	845	Lola Oberman	890	Sam Booher
801	Jan Martin	846	Trygve Anderson	891	Paul Mahoney
802	Claire Necker	847	Barbara Smith	892	William H. Funk
803	JoAnn Bowman	848	Janet Wojna	893	Pamela Werner
804	[illegible]	849	The Evergreen Naturalists Audubon Society, Inc.	894	Diana Redwood
805	May Reed and Rick Johnson	850	Charlie Ott	895	Jonathan Curley
806	Susan M. Williams	851	Native Village of Barrow	896	Virginia Lacy
807	Jeffrey Unger	852	E-mail mail-in campaign (NAEC)	897	Christy Halverson
808	P. Forth	853	Hugh A. Bialecki	898	rein hold [e-mail address]
809	William Galli	854	Louis Celenza	899	Denny O'Neal
810	R. W. Hutchins	855	Ray Vaughan	900	Alaska Discovery, Inc.
811	Doris Rime	856	Andrew J. Orahoske	901	Philip Kunzler
812	Melba and Willis Simms and 11 others	857	Sarah DiJulio	902	Chris White
813	Thalia L. Potter	858	Broward County Sierra Club	903	Margaret E. Atwater
814	Gary Margolis and Family	859	Nick Patel	904	Thomas Boyle
815	Brendan McCann	860	Cold Mountain, Cold Rivers	905	James V. Drew
816	Jamie Vitale	861	Tory Ewing	906	Becky Statzel
817	Monica Grunick	862	Vicky Hoover	907	Paul C. Rusanowski
818	Keonda Thompson	863	Kimberly Wine	908	Lorie B. Kellogg
819	Kevin J. Bazner	864	Matt Golec	909	Kedi Bond
820	Lawrence Gochioco	865	James W. Ehl	910	Andrea FitzGibbon
821	John Sciullo	866	John W. Baker	911	Kim Renninger
822	Melissa Cox	867	Allan Chen	912	Marisol Quintana Galetovic

913	Terry Finnegan	958	Carol Blumenthal	1003	Marilyn Dinger
914	Karen Smith	959	Export Council of Alaska	1004	Richard Schuckman
915	Doreen Cavanaugh	960	Swan Research Program	1005	Nic Korte
916	Danielle Margo Harris	961	Mary Miles	1006	Chuck Cheesman
917	David A. Brunetti	962	Mary A. Vincenti	1007	Catherine Motycka
918	William M. Cox	963	Robert Moss	1008	Mark Brown
919	Diane Sallee	964	Brad P. Agius	1009	Clark W. Bailey
920	Joseph Gaylo	965	William H. Hammer	1010	John M and Sarah W. Bailey
921	Elizabeth Gaylo	966	Karl R. Feller	1011	Stephen R. Roylance
922	Susan B. Gaylo	967	Philip R. Machonis	1012	Mail-in campaign
923	Richard Spotts	968	Cynthia Weeks and Don Johnston	1013	Wallace M. Elton
924	Mark R. Johnston	969	Alice J. Shane	1014	National Audubon Society, Rocky Mountain Regional Office
925	M. Hartzell	970	Elizabeth Allen	1015	Michael E. Gordon
926	Margie Pulliam	971	Rachel E. Bernatz	1016	Thomas M. Szot
927	Annette DiBiase	972	Jeanne Perkins	1017	John E. Kellogg
928	Greg Juenemann	973	Carrie Kuzma	1018	Jennifer Whitaker
929	Clyde H. Dilley	974	Roberta Phillip	1019	Kimberly Wine
930	A. R. Lapalme	975	John N. Kent	1020	Ken and Debbie McMaster
931	Patricia Amos	976	Ozone Action	1021	Sierra Club-John Muir Chapter
932	Doug Wiegard	977	Gwen Mehring	1022	Thomas Warner
933	Carol E. Fletcher	978	Bill and Marilyn Voorhies	1023	Andrea B. Fox
934	Ursula Mayer	979	Sidney Falik	1024	Laurence M. Nuelle
935	Melyssa C. Guerry	980	Kate F. Conly	1025	Margie J. Haley
936	Marian J. Setter	981	Tina Farley	1026	Terri Lee Frondell
937	Kansas Audubon Council	982	Annalisa Bragg	1027	Catherine V. Pardee
938	Beatrice Monow	983	Theodore and Barbara Mertig	1028	Claudia Rector
939	Klamath Forest Alliance	984	Shelly Banonis	1029	Jacqueline B. May
940	Marvin P. Ostrander	985	Briget Baroni	1030	Joan G. Creager
941	Robin M. Pickens	986	Molly Mueller	1031	Amy Marsh
942	Georgia Conti	987	Joel Davis	1032	William F. Jud
943	Douglas W. Martin	988	Kris A. Bronars	1033	Bethany J. Brosey
944	Deborah and Arnold Katz	989	Kenneth and Cherie Mason	1034	C. Danita Bohmer
945	Julie Sussin	990	Arthur Norcross	1035	John Provenzale
946	Eric P. Weidman	991	Michael J. Zielski	1036	Lander Valley Chapter, People for the USA
947	Laura Turner Lynch	992	Karen Baker	1037	Roger W. Papler
948	M. E. Covert	993	Kevin Porter	1038	Gordon Bloom
949	Maggie Murphy	994	Paul David Tuff	1039	Craig and Laura Franciscus
950	Wilma Katz	995	Lauren Laitala	1040	Jeanne M. Duckworth
951	Mary MacGregor	996	Sara L. Litke	1041	Alan Carlton
952	Cindy Malone	997	Margie O'Brien	1042	Monica Wesolowska
953	Mail-in campaign, mostly Chicago-area	998	Mail-in campaign (People for the USA, Missouri)	1043	Jim O'Neill
954	Institute for Creative Solutions	999	Mark Herwig	1044	Lonner Holden
955	City of Wainwright, AK	1000	City of Valdez	1045	Troy Dunn
956	Patricia Rawert	1001	Dennis R. Winters	1046	John Maroney
957	Heather Tillman	1002	Janet Scott	1047	Shelley Volk

1048	Robert C. Walters	1094	Pamela Glassoff	1140	Kyle Cato
1049	Mark M. Giese	1095	Eleanor Maclellan	1141	Helen and Wentworth Clark
1050	James B. Mitchell	1096	Stanley Gregory	1142	Sharon Sielski
1051	Marilyn Palmer	1097	Robin Morton	1143	Jennifer Rohrs
1052	Joe and Deborah Toigo	1098	Brenda Chandler	1144	Nicole C. Faulkner
1053	Kevin Meyers	1099	Monica Peri	1145	Lynda Fanning
1054	Janet Kuncl	1100	John L. Bukley	1146	Nate Harris
1055	Donald R. Erwin	1101	Ruth B. Whipple	1147	Susan Olsen
1056	Thomas M. Szot	1102	Mary Jane Widmayer	1148	Audrey Sobisek
1057	Don Dumm	1103	Torrence O'Neill	1149	Bryce E. Smith
1058	Susan Payne	1104	Tom Gilmore	1150	The Emley Family
1059	Mildred M. Martin	1105	Timothy J. Ream	1151	Henry Peck
1060	Vincent A. Vespole	1106	Mary J. Feldman	1152	Violette B. Van Belle
1061	Emily Nobel-Maxwell	1107	Mary Ann Baruch	1153	Brenda King
1062	Sarah Blum	1108	M. Ruth Niswander	1154	Dorothy F. Taylor
1063	Matthew Mann	1109	Stanley T. Foo	1155	Koniag, Incorporated
1064	Jessica Parker	1110	Erich Sperr	1156	Smokey Norton
1065	Laura Zaino	1111	Constance Sechrest	1157	Alice D. Fischer
1066	William R. Nunamaker	1112	Lori Terwilliger	1158	Melissa Boyle
1067	Ernest N. Thompson	1113	C. A. Tsegi	1159	Lyndon C. Ibele
1068	Chad Kopp	1114	Michael Pagliarulo	1160	Peak Oilfield Service, Co.
1069	P. Swan	1115	Jimmy L. Hart	1161	Katherine Delanoy
1070	Shafrin	1116	Dean H. duVernet	1162	Mitra Sadeghpour
1071	J. A Geist	1117	Mark Carroll and Janneen Day	1163	Robert Katz
1072	Marilyn Naslund	1118	George Strauss	1164	John Koranda
1073	Virginia Steet	1119	Graydon Dill	1165	Rebecca Boyd
1074	Irene Cannon-Geary	1120	Stephen Canning	1166	David and Kathy Richmond
1075	Bill and Terri Michel	1121	Kate Searle	1167	Puget Sound Urban Wildlife Photography Club
1076	Mr. & Mrs. James L. Denison	1122	Deborah Chirco-Macdonald	1168	Dharam Singh Khalsa
1077	unsigned	1123	Jan and Paul Morrison	1169	Hugh R. Givens
1078	Arthur Freyed	1124	Ady Kendler	1170	Marcy R. Reed
1079	Kim Klaas	1125	Pat L. Jacobs	1171	Carlton Walker
1080	Carolyn Erbele	1126	Wendy A. Bekx	1172	Richard Lehtinen
1081	Celia R. Reyes	1127	John E. Kosar, III	1173	Casey Lynn Schmidt
1082	James D'Angelo	1128	Jeff Juel	1174	Maggie Winslow
1083	Tracey and Mark Rawlings	1129	Marcello LaRosa	1175	M. E. Quinn
1084	John Sei[illegible]	1130	R. Devon and Linda D. Bowman	1176	Gary Deeter
1085	L. R. Brandon	1131	Darin Findley	1177	Jean L. Woodman
1086	unsigned	1132	Nicole Elliott	1178	Anna R. Mosqueda
1087	Peter W. Glander	1133	Jennifer Goldstein	1179	Robert Wendelgass
1088	Barbara Tomlinson	1134	Tom Ingersoll	1180	Wade Anderson
1089	Mrs. Carl Turner	1135	Sarah Knievel	1181	Robert C. Beason
1090	Scott Holtslander	1136	Wendy Malmid	1182	Rebecca Romsdahl
1091	Jamrs R. Branscome	1137	Len Elliott	1183	Ann F. Rhoads
1092	Rachelle Coleman	1138	Jeanne Held-Warmkessel	1184	Felisa A. Smith
1093	Martha Kuhlman	1139	Beth Caldwell	1185	Maurice Hollowell

1186	unsigned	1233	Reke Ott	1280	Benjamin Axleroad
1187	Charles R. Statum	1234	Stephen Verchinski	1281	Carl L. Heinrich
1188	Evelyn Waldo	1235	Christa Richter	1282	William McLaughlin
1189	Lu Ann Ollert	1236	Jessica Robinson	1283	James P. Wilson
1190	Valerie Yoder	1237	Cathy Teich	1284	Raymond E. Dirkin
1191	Shannon Davis	1238	Sherly Salasby	1285	The Dorsey Trust
1192	George A. Ramsdell	1239	Constance F. Griffith	1286	Robert D. Lynn
1193	Suzanne and William Dunk	1240	Susan Cunningham [illegible]	1287	Clarence Barnes
1194	Tom J. Cade	1241	Scott B. Nelson	1288	Eugene D. Foss, M.D.
1195	Native Village of Barrow	1242	Sara Molyneaux	1289	Donald H. Johnson
1196	Kathy Franke	1243	Charles R. de Burlo, PhD	1290	John F. Giles, III
1197	T. Roland	1244	Jane R. Chase	1291	Margaret L. Olsen
1198	Lawrence C. Lemmon	1245	William R. Hechinger	1292	Al Beavis
1199	Nabors Alaska	1246	City of Nuiqsut	1293	Albert Tuss
1200	Casey E. Sullivan	1247	Sitnasuak Native Corporation	1294	Eaner P. Higgins, M.D.
1201	Sierra Club, Berks Group	1248	Dorothy Raker	1295	John F. Harvey
1202	Pamela M. Faustine	1249	Pauline K. and Paul Ribar	1296	Robert F. Cutler, Sr.
1203	Francis E. Chamberlin	1250	Beth S. Carlson	1297	Perry B. Morris
1204	Don A. Apikos	1251	Jack Robins	1298	Mary M. Meyer
1205	Daniel B. Hastings, Jr.	1252	E. R. Gustafson	1299	Thomas [illegible]
1206	Clarance S. Coe	1253	Dan D. Stepnewski	1300	Lawrence E. Haack
1207	Jan T. Macauley	1254	Richard A. Shaffer	1301	Ross S. Schoolroy
1208	Robert B. Hastie	1255	David A. Rintoul	1302	J. F. Smith
1209	Dristine Kadlec	1256	John Hortenstine	1303	C. Walter Martin
1210	Peter Van Kuran	1257	Lyndon E. Overholser	1304	W. M. Beecherl
1211	George P. Cesnik	1258	Morris R. Graham	1305	Liza J. Ainsworth
1212	Rosalynn Greene	1259	Pauline Warmuth	1306	Richard H. Burkhart
1213	Tim Hogan	1260	People for the USA, Potosi Chapter	1307	Herb Hallander
1214	Churchill J. Campbell	1261	Harry J. Murray	1308	Herbert L. Goldstein
1215	John L. Keplinger	1262	John B. Clapham	1309	Raymond R. Berry
1216	Audrey Sanderson	1263	Harold Coppage	1310	Earl B. Raacke
1217	J. B. Jacks	1264	Cathy Arnett	1311	Robert Weber
1218	Raymond P. Walker	1265	Kennith H. Richardson	1312	Ruth H. Barber
1219	Patricia Villasenor	1266	Robert B. Quayle	1313	U.S. Arctic Research Commission
1220	Tim Hunter	1267	Neda M. Michels	1314	Alaska Waveriders
1221	Nancy Zierenberg	1268	Marjorie P. Maxwell	1315	Benjamin M. Chaffee
1222	Doug Israel	1269	Howard S. Thorn	1316	Jenna Alden
1223	Paul DeMafo	1270	Alex J. Stewart	1317	Rachel Sanchez
1224	Jack Smith	1271	Jane Maya Shippy	1318	Zachary Sandler
1225	Larry Evans	1272	John [illegible]	1319	Ralph D. Gilbert
1226	Tye Eyden	1273	George A. Barnett	1320	Robert G. Kline
1227	Greg Probst	1274	Thomas Gysi	1321	Roy D. Wynn
1228	no name provided	1275	R. Clifford Owen	1322	F. Harry Mcbride
1229	Jennifer Morse	1276	William C. Miller	1323	Vincent R. D' Alessandro
1230	Christine Vitalis	1277	Mary E. Goldschmidt	1324	Lee R. Curtis
1231	Robert W. [illegible]	1278	Rudolph Arndt	1325	Glenn R. Jordan
1232	Allen L. Kost	1279	John L. Gring	1326	Matt Dietz

1327	Samuel MacNutt	1372	Harrison Grathwohl	1417	Timothy J. Sweeney
1328	L. J. Seemey	1373	Eric Hurst	1418	Carolyn L. Fuss
1329	Derek Mchaffie	1374	Carol W. Bollwinkel	1419	Marylin Dinger
1330	Joyce M. Galaktionoff	1375	Russ Cronquist	1420	Charlotte Trolinger
1331	Tom Brennan	1376	Stewart Pravda	1421	Bruce M. Ridgeway
1332	Earl C. Herkenoff	1377	Michael McFarland	1422	Rebecca Cohen
1333	Anadarko Petroleum Corp.	1378	Joan Blyth-Lovell	1423	Alaska Executive Search
1334	U.S. Army Corps of Engineers	1379	John Brauner	1424	Lowrena Cole
1335	Gail Phillips, Speaker of the House	1380	Lisa Jackson	1425	Mary Lou Toal
1336	Jane Robertson	1381	Mr. and Mrs. Mark H. Reed	1426	V. J. Blaha
1337	Michael F. Nielsen	1382	Robert W. Hansaen	1427	Stanley T. Kiwala
1338	Thomas J. [illegible]	1383	Eric Britten	1428	Kenneth V. Terrell
1339	Petro Marine Services	1384	John D. Boone	1429	Ralph E. Styring, Jr.
1340	Carol Mapes	1385	Robert Mudd	1430	Earl Berryhill
1341	Marjorie L. Blaufuss	1386	Tom Barker	1431	Richard M. Stewart
1342	Rita Morris	1387	Marjorie Davis	1432	James C. Stone
1343	John R. McCarron	1388	Elsie Dupree	1433	W. E. Pirtle
1344	Robert E. Grossman	1389	Gene and Linda Sentz	1434	Carl Reinecke
1345	George Epstein	1390	Maynard Tapp	1435	Richard T. Pancoast
1346	R. J. Holmes	1391	Caro Grayhall	1436	Walter T. Kulhowvick
1347	Era Aviation, Inc.	1392	Norm Sharp	1437	D. W. Rowell
1348	William A. Jagger	1393	Alan Block	1438	C. A. Winston
1349	F. Piskolich	1394	Jack E. Phelps	1439	Steve Albert
1350	John W. Decker	1395	Dan Woods	1440	Timothy C. Sullivan
1351	John B. Smith	1396	Harold M. Hume, Jr.	1441	Jessica L. Blinn
1352	Paul Ohan	1397	Nathan Wyeth	1442	Matt Rahaim
1353	Maria Stasavage	1398	Doreen Lampe	1443	William J. O' Donnell
1354	Quyen Luong	1399	Theodore Mertig	1444	L. W. Born, Jr.
1355	Harris Darow	1400	Susan Christy	1445	W. P. Wells
1356	Peter W. Ladas	1401	Phillips Petroleum Comp.	1446	Wesley W. Pendelton
1357	Manley & Phyllis Kjonaas	1402	Scott Brame	1447	Roland M. Bixler
1358	Alice E. Jensen	1403	Jonathan Shapiro	1448	Robert A. Greer
1359	Raymond H. Stutzman	1404	John Friede	1449	American Association of Petroleum Geologists
1360	William & Helen Wentzel	1405	Michael Clark	1450	Jim Greer
1361	James M. Dunn	1406	Tammy J. Alonso	1451	E-mail mail-in campaign
1362	Martha E. Taylor	1407	John C. Calhoun, Jr.	1452	E-mail mail-in campaign
1363	Miles E. Tuttle	1408	Robert T. Lindsay	1453	E-mail mail-in campaign
1364	Ann Leonard	1409	Ed Talbot	1454	State petroleum councils (American Petroleum Institute initiative)
1365	Jay Warner	1410	Sue Eisenfield	1455	Joseph L. Choquette III
1366	Philip Cafaro	1411	Richard Wood	1456	Michele Chalice
1367	skatz (e-mail address)	1412	Michael W. Skidmore	1457	Peter S. Kirkwood
1368	Ronnie Hawkins	1413	J. Ward Rafferty	1458	Nicholas B. Wynnick
1369	Ecoladyl	1414	Mark McDermott	1459	Mary L. States
1370	Sherry Lewis & Jim Logan	1415	Ryan Gustafson	1460	Albert J. Schmidt
1371	Richard A. Pearson	1416	Kevin Gustafson	1461	Tom B. Rhodes

1462	Warren H. And Pauline Becker	1508	Arthur Jenkins	1554	Robert M. Friedman
1463	Don Boyle	1509	Bernice M. Thorton	1555	Jeannie Graham
1464	Martin and Helen Hannifan	1510	Trudy Gerlach	1556	Douglas Everhart
1465	Thomas C. Martin	1511	Peter H. Dierlich	1557	M. R. Leonard
1466	Sue Kaufman	1512	Irvin Kriewaldt	1558	Brian H. Vogt
1467	Charles Lahm	1513	Lee Eschen Jr.	1559	George Cole
1468	Wilma Ward	1514	H Stone	1560	John J. Will
1469	John C. Fenoglio	1515	Richard E. Wagner	1561	Konrad Loebl
1470	Betty J. Gerst	1516	Roy C. Evans	1562	Frances Stobaugh
1471	Catherine Merritt	1517	H. Wilson Price, Jr.	1563	Edward C. Conrads
1472	Alan L. Boyer	1518	Hans J. Rothkegel	1564	Mary M. Lesley
1473	Dr. Carl C. Walters	1519	Natie Milero	1565	Grant Morse
1474	Ruth Thorner	1520	Betty Leech	1566	Nona B. Roldan
1475	Harold Emanuelson	1521	Thomas E. Sweitzer	1567	Robert F. Haefner
1476	Frank Szeplakay	1522	Robert B. Hamilton	1568	F. R. Erskine Crossley
1477	Ronald Gould	1523	Lucy J. Valucki	1569	E. L. Zanetti
1478	Patrick Halligan	1524	John B. Jared, Jr.	1570	Audrey K. Brumage
1479	John F. Reeves	1525	Frank Lentz	1571	Vincent P. Davry
1480	Horace Lowers	1526	Warren Lowry	1572	Elwayne E. Wilcox
1481	William H. Feldman	1527	Thomas B. Metzger	1573	Stanley E. Senner
1482	Jacob Brodkin	1528	Sandra D. Lemke	1574	Richard L. Cathriner
1483	Patrick E. Roszel	1529	Patricia Fischer	1575	James Drake
1484	Herbert B.Smith, Jr.	1530	Deborah A. Drissell	1576	Laura B. Frake
1485	Gene Corman	1531	Alfred C. Hansen	1577	Helen M. Redic
1486	Robert I. Harris	1532	J. W. Beckwith	1578	Delpha S. Garcia
1487	Emily Weissman	1533	Jaha' Brook	1579	Debra L. Clossey
1488	Wilbur F. Abbott	1534	Robert A. Milostan	1580	William Toner
1489	National Audubon Society	1535	R. J. Noonen	1581	Joanne M. Berdeen
1490	Sara L. Litke	1536	Paul L. Gomory	1582	Genevieve Teele
1491	Gene L. Weger	1537	Bill Bollenbach	1583	Elerbey Pringle, Jr.
1492	Erica [illegible]	1538	W. Larry Amundson	1584	Levora Arno
1493	Mike Lee	1539	Barbara MD	1585	Roger Harwood
1494	Seward Weber	1540	J. Cheston M. Newbold	1586	Vincent A. Glowczewski
1495	Brad Vanelerelenf	1541	Wilbur E. Myers	1587	Joseph J. Antosh
1496	John H. Ramer, PhD	1542	Lionel D. Norris	1588	Robert K. Brechbill
1497	William H. Otwell	1543	Cleo E. Meals	1589	John A. White
1498	Will H. Hays, Jr.	1544	Jason A. Campbell	1590	Joseph J. Baczek
1499	Gary L. Pearson	1545	Kingsbury M. Billings	1591	Lysa Dethomas
1500	Jaqueline E. Moore	1546	Frederick C. Hinchcliff	1592	Ernest B. Corrick
1501	Postcard Mail-in (Sierra Club-Alaska Task Force)	1547	Louis Painelli	1593	Hilbert Grossman
1502	D. P. Wheeler	1548	Udelhoven Oilfield System Service, Inc.	1594	Erin R. Welch
1503	Dan Pinagro	1549	Northeast Pa. Audubon Society	1595	Francis H. Brown
1504	M Rebecca Sapp	1550	Lashawn Bollenbach	1596	Thomas L. Branch
1505	Marshall Alexander Monsell	1551	J. Hugh Snedden	1597	Jack C. Laflin
1506	Leo Batliner	1552	James V. Gilbert	1598	Eric F. Myers
1507	Hallard C. Moyer	1553	Wallace Sellers	1599	Lynden Inc.

1600	The Alliance	1643	Richard L. Murray	1686	Alaska Miners Association, Inc.
1601	Naomi Metz	1644	Quittapahilla Audubon Society	1687	GrassRoots Environmental Effectiveness Network
1602	Mary Jane Cummings	1645	Katie Theisen	1688	IPAA
1603	R. S. Civilino	1646	Heather Preidhof	1689	True Oil Company
1604	Eric Brooks	1647	Fred R. Anderson	1690	Anchorage Economical Developement Corporation
1605	Arthur Preyer	1648	Amy Eisenhower	1691	T. S. (SAM) McGehee
1606	[illegible]	1649	Norton P. Birdsall	1692	Natural Gas Supply Association
1607	J. E. [illegible]	1650	Susan Byrd	1693	Sharon Walker
1608	Richard H Tisdale	1651	Gwen Wolfram	1694	Chevron
1609	Andy Dalziel	1652	U.S. Environmental Protection Agency	1695	Roger C. Herrera
1610	Jeri Vallvalec	1653	Alaska State Chamber of Commerce	1696	Ornithological Council
1611	Christy Jessip	1654	American Petroleum Institute	1697	Polarconsult alaska, inc.
1612	[illegible]	1655	Rowan Companies, Inc.	1698	Robert E. Southworth
1613	J. E. Knapstad	1656	Alaska Oil and Gas Association	1699	L. J. Newman
1614	Leland E. Wilson	1657	U.S. Department of Energy	1700	Charleene Nye
1615	Justin Tamplin	1658	BP Exploration	1701	Don Argetsinger
1616	Jesse H. Oppenheimer	1659	Alaska State Legislature	1702	Fred H. Parrott
1617	Olga Mandrussow	1660	State of Alaska	1703	Charles Kelble
1618	Norwood H. Meyer	1661	American Bird Conservancy	1704	Ray D. Mishler
1619	Lisa Jean	1662	ARCO Alaska	1705	Hansen Engineering
1620	Jim Pullen	1663	U.S. Representative Don Young	1706	Leonard Hoffman
1621	John Blennerman	1664	National Audubon Society, Alaska State Office	1707	Thomas M. Smouse
1622	Ron McKean	1665	Alaska State Legislature, House of Representatives	1708	K. G. Adams
1623	no name	1666	U.S. Senator Ted Stevens	1709	Ethan J. Temple
1624	Harry G. Walters	1667	Pacific Legal Foundation	1710	Paul S. Glavinovich
1625	[illegible]	1668	Endangered Species Coalition	1711	Fred Noz
1626	no name	1669	North Slope Borough	1712	Edward F. Wagner
1627	Peter L. Palla	1670	Kuukpik Corporation	1713	Cheryl Smith
1628	Lars Limburg	1671	Arctic Slope Native Association, Limited	1714	Allen F. Nickeron
1629	HelenHenne	1672	S. Craig Gerlach	1715	John G. Bunsola
1630	Charles Ezmirlian	1673	David van den Berg	1716	[illegible]
1631	Dorothy D. Hall	1674	Alaska State Legislature	1717	J. P. Kamer
1632	Fred H. Rudy	1675	Northern Alaska Environmental Center, et al.	1718	B. J. Hodge
1633	C. A. Jones	1676	Chandler & Associates	1719	Joseph C. Phipps
1634	Keren Campbell	1677	Exxon Company	1720	Edward M. Sibley
1635	Lee A. Keeling	1678	Bill Melcher	1721	Warren H. Chivers
1636	Ted Shettler	1679	Liz Delleart	1722	James R Chatham
1637	E. R. Christenson	1680	Colin McMullan	1723	William J. Deromedi
1638	Sal Randazzo	1681	Jennifer Clark	1724	Robert J. Chorlton
1639	Nina B. Zapffe	1682	Douglas Beagley	1725	Clyde R. Butler
1640	Sydney Smith	1683	Yan Au	1726	Estel H. Counts
1641	Peter G. Burnett	1684	Adam Levine	1727	Nova L. Space
1642	Weldon J. Wonn	1685	Aaron Allen	1728	Woodrow Coleman

1729	[illegible]	1771	Paul W. Stade, Jr.	1813	Gordon Brown
1730	Charles V. Christian	1772	Benjamin Enticknap	1814	John S. Carson
1731	Marjorie E. Breidenbach	1773	Grace R. Keese	1815	Edward Wiggins
1732	Tonya Schlentner	1774	Chugach Alaska Corp.	1816	Joseph Carroll
1733	Nicola [illegible]	1775	Homer J. Campbell	1817	Paul J. Everett
1734	Gordon Early	1776	Eugene B. Byrnes	1818	Arlene C. Haynes
1735	Roni Lawrence	1777	Robert J. Bell	1819	Jeanette R. Messina
1736	Dave Brucker	1778	Debra E. Einstein	1820	[illegible]
1737	Allen L. Kohler	1779	City and Borough of Sitka	1821	Lillie Y. Prince
1738	Marilyn Houser	1780	Larry Daniels	1822	Edith and Glenn Pollock
1739	John M. Schultz	1781	Hawk Construction Consultants, Inc.	1823	Richard Donnelly
1740	Connie L. Duersch	1782	Alfonso Pratesi	1824	Cathie and Mitchell Lamm
1741	Stephen Paul	1783	William F. Grauten	1825	John R. Davis
1742	Edmund S. Krajna	1784	Leland R. Boll	1826	Virgil E. Tipton, A. Catherine Tipton, and Ann E. Layton
1743	Leon Lloyd	1785	Harvey Rookus	1827	John N. Allen
1744	Irene Kidd	1786	Mary McFadzen	1828	W. H. Schneider
1745	Jane Duganz	1787	Donna Bielby	1829	Joseph Fitzpatrick
1746	Marge Thompson	1788	Samuel S. Young	1830	Eric Scheuering
1747	Mary Kay Teel	1789	American Copper & Nickel Company Inc.	1831	Marathon Oil Company
1748	George B. Elliott	1790	Steve Connelly	1832	Grace Boulton
1749	L. V. Gefuent	1791	Don W. Williams	1833	Robert and Elizabeth Witt
1750	R. A. Bernick	1792	[illegible]	1834	Charles W. Haggans
1751	Arctic Slope Regional Corporation	1793	Jan Siebert-Wahummund	1835	[illegible]
1752	U.S. Fish and Wildlife Service	1794	Willy Dunne	1836	Damon R. Phillips
1753	Robert Lee Corbett	1795	Paul A. Stunborn	1837	Irene M. Sharp
1754	Richard G. Wallace	1796	Kenneth P. Kedzior	1838	James and Annie Fuston
1755	Elida Lopoo	1797	Harriet and John Wilcox	1839	Alaska Resource Advisory Council, Bureau of Land Management
1756	Mary L. Stevens	1798	Marjorie L. Lukanitsch	1840	James E. Robinson
1757	Wayne Hall	1799	Janeen Herr	1841	Ruth Wood
1758	Susan Jane Lillie	1800	Paul Ribar	1842	Rowe [illegible]
1759	Murray S. Underwood	1801	Karen Brewster	1843	Audubon Society chapter, Winston-Salem, NC
1760	Denise Ulrich	1802	Simon Crelli	1844	League of Women Voters of Forsyth Co., NC
1761	Glen D. Macphee	1803	Gene P. Rutledge	1845	Robert Schmeizer
1762	Carl Horten	1804	Amy Maclean	1846	Edgar A Allshouse, Jr.
1763	Hugh E. Earley	1805	Robert M. Harrold	1847	Fritz Gerhardt
1764	Harvey J. Grimes	1806	Leola Kraft	1848	Lori Terwilliger
1765	John Lynch	1807	Florence E. Hanlan	1849	Ken Russell
1766	Tenley E. Wurglitz	1808	Alice C. Costello	1850	Nancy DeWitt
1767	Henry H. Paige	1809	Dorothy E. Roberts	1851	Wilderness Society, NRDC, NWF, WWF, ACE, NAEC, Sierra Club, etc.
1768	Eastern Petroleum Corp.	1810	Maryellew Strand	1852	Association of Village Council Presidents
1769	Dorthy and Harvey Kuecker	1811	Sam Gale	1853	Northern Alaska Environmental Center
1770	Robert K. Allen	1812	Carl Potts	1854	Pamela A. Miller

1855	Mary Reed	1900	Oilwatch Alaska	1945	Genevieve Estes
1856	Chapman C. Brown	1901	UIC Ukpeagvik	1946	[illegible]
1857	Steve Tway	1902	Yates Petroleum Corporation	1947	Bartlett
1858	Daniel C. Dodd	1903	Doug Jones	1948	George A. Anderson
1859	Katherine McKenzie	1904	Kathryn Petersen	1949	Ted Zukoski
1860	Joseph & Nancy Hagarty	1905	Harold L. Reade	1950	Pioneer Natural Resources
1861	Steve Reidsma	1906	Fred B. Hudspeth	1951	Alaska Community Action on Toxics
1862	Elma H. Matthew	1907	Deborah Crouse, Ph.D.	1952	Arctic Audubon Society
1863	George Norris	1908	U.S. Department of Commerce	1953	Celia M. Hunter
1864	Lisa Moorehead	1909	Dan Ritzman	1954	Laura Ruth Henry
1865	Dr. J. Z. Ainsworth	1910	Lou McDonald	1955	Trish Klahr
1866	Philip & Bette Popiel	1911	Elizabeth A. Brensinger	1956	Scott Species
1867	Wilderness Birding Adventures	1912	Robyn Weaver	1957	DOWL Engineers
1868	Bill Arthur	1913	Tony Rango	1958	Michael W. Gillenwater
1869	U.S. Geological Survey	1914	Jason Ellis	1959	Cathleen Kelly
1870	Paula Hendrickson	1915	Calvin C. French	1960	Carol Blaney
1871	The American Habitat Club	1916	Bill Oliver	1961	Jay Kardan
1872	Michele Mattingly	1917	Stina Pope	1962	Sandra Miles
1873	Lisa Boland	1918	Joel Butts	1963	D. T. Dorsey
1874	Frank E. Sivak	1919	Richard Dale	1964	Christen L. Skaer
1875	Paula Martin	1920	Tassos Anastassiades	1965	Marie A. Cecchini
1876	Robert C. Weed	1921	Kathy Roediger	1966	Stuart Clark
1877	Bert Talbot	1922	Norman N. Crocker	1967	Christine M. Blazejewski
1878	Joan Blyth-Lovell	1923	R. Jan Benjamin	1968	Kenneth S. Warren
1879	Mamie King	1924	Harlo Lenning	1969	Murray Rosenthal
1880	Ted B. Panaccion	1925	Jane R. Clark	1970	Eleanor Franzke
1881	Kay Mac Neil	1926	Jonathan Green	1971	John M. Nuss
1882	Gregory K. Michael	1927	Jim Ehl	1972	W. Kerr Godfrey
1883	Patricia Witthauer	1928	Paul Berteau	1973	Michael Roth
1884	Barbara Anne Blackie	1929	Sarah Wesseler	1974	Malcolm Mac [illegible]
1885	Claudia Thompson	1930	Joyce Tarnow	1975	R. B. Rohn
1886	Tom Vanderweel	1931	Susan Straley	1976	Martha J. Jarrard
1887	Jill Marie Holden	1932	George Ellman	1977	Mary G. Wesloh
1888	Ernest D. Malone	1933	Tom Bachmann	1978	Jill Fuglister
1889	Eric Nielsen	1934	Margaret Dale	1979	W. Herbert McHarg
1890	Marion D. Adams	1935	David H. Byman	1980	Linne Lundbeck
1891	Leigh Fox	1936	Summer L. Laws	1981	Patricia Castator
1892	Raymond Gravatt	1937	Keith Robinson	1982	Clayton M. White, Ph.D.
1893	Shirley M. Keeney	1938	Chris Peredney	1983	Lawrence and Sharon Frellich
1894	Francis M. Sippel-Wetmore	1939	R. Gerry Plummer	1984	Michael S. Schmotzer
1895	Ralph L. Chatfield	1940	Steve Brown	1985	Al Gallo
1896	Alaska Coalition of Minnesota	1941	Cara O' Neill	1986	Shell Exploration and Production Company
1897	Arthur N. Milliken	1942	Helen G. Krauss	1987	Chugach Alaska Corporation
1898	Pacific Coast Federation of Fisherman's Association, Inc.	1943	Louis Eller	1988	Afognak Native Corporation
1899	Raptor Research Foundation, Inc.	1944	[illegible]	1989	Brent Senette

1990	Matteo Burani	2008	Joan Dean	2026	Beth S. Carlson
1991	Dell Eriksson	2009	Richard D. Scherer	2027	Thomas and Maria Eisner
1992	Alaska Furniture MFRS, Inc.	2010	Joseph B. Ogrin	2028	Eric Schrading
1993	Evan Pickford	2011	Harriet W. Cook	2029	A. J. Anderson
1994	Pam Hewitt	2012	Janet Ganter Shaffer	2030	David L. Miller
1995	Andrea Denham	2013	Darlene Simdorn	2031	Gale Mead Hey
1996	Gen Graves	2014	Joseph Miller	2032	Justin Rood
1997	Chesapeake Bay Foundation	2015	Muriel S. Hayward	2033	Julie C. Blunt
1998	Fritz Gerhardt	2016	Nicki Sanders	2034	Clark H. Coan
1999	Richard Jefferies	2017	Marcus Whiting	2035	Joseph and Voni Strasser
2000	Kathrine B. Powell	2018	Christine Witkowski	2036	Edward J. Blotzer
2001	Alaska Management Consultants	2019	Joel MacAustan	2037	P. Brian Rogers
2002	Paul F. Jacobson	2020	Frieda Hutchison	2038	Dave Tetreault
2003	Elizabeth Dixon	2021	Homer J. Campbell	2039	John R. McGrail
2004	Mail-in campaign	2022	Sandra D. Lemke	2040	National Audubon Society
2005	David Greensfielder	2023	Susanne Paulstich	2041	Dubuque County (IA) Conservation Society
2006	Tyme	2024	Albert Frenkel	2042	*New York Times* advertisement clipping
2007	Walter H. Mees, Jr.	2025	Janie Pederson	2043	Form letter Mail-in (Natural Resource Defense Council

Table J-2
Providers of Oral Testimony on the NE NPR-A IAP\EIS

Anaktuvuk Pass		AN35	Stacey Marz	FA24	Jon Miller
AP1	Gilbert Lincoln	AN36	Robyn McClean	FA25	Robert Fox
AP2	Lazarus Rulland	AN37	Wayne Helander	FA26	David van den Berg
AP3	Arnold Brower, Jr.	AN38	Carol Casa	FA27	Roger Siglin
AP4	Mike Morry		**Atqasuk**	FA28	Mike Taylor
AP5	Ben Hopson, Jr.	AT1	Benjamin Nageak, NSB Mayor	FA29	Cathy Merritt
AP6	Karen Burnell for NSB Mayor Nageak	AT2	Bartz Englishoe	FA30	Joseph Rueter
AP7	Lela Ahgook	AT3	Arnold Brower, Jr.	FA31	Karen Brewster
AP8	Johnny Rulland		**Barrow**	FA32	Kerynn Fisher
Anchorage		BA1	Benjamin Nageak, NSB Mayor	**Nuiqsut**	
AN1	Commissioner John Shively	BA2	Jacob Adams	NQ1	Johnny Ahtuangaruak
AN2	Becky Gay	BA3	Jana Harcharek	NQ2	Thomas Napageak
AN3	George Schmidt	BA4	Commissioner Marty Rutherford	NQ3	Joe Nukapigak
AN4	Kevin Harun	BA5	Morgan Solomon	NQ4	Ruth Nukapigak
AN5	Nancy Michaelson	BA6	Bill Tegoseak	NQ5	Bernice Kaigelak
AN6	Jim Sykes	BA7	Don Long	NQ6	Mayor Leonard Lampe
AN7	Mike Macy	BA8	Arnold Brower, Jr.	NQ7	Sarah Kunaknana
AN8	Bob Randall	BA9	Johnny Brower	NQ8	Archie Ahkivlana
AN9	Mike Joyce	BA10	Mayor Jim Vorderstrasse	NQ9	Nelson Ahvakana
AN10	Allen Smith	BA11	Daniel Okomailak	NQ10	Karen Burnell for NSB Mayor Nageak
AN11	Judy Brady		**Fairbanks**	**San Francisco**	
AN12	Joseph F. Kirchner	FA1	Sean McGuire	SF1	Paul G. Walker
AN13	Carl Portman	FA2	Commissioner Mary Rutherford	SF2	Nic Taylor
AN14	Pam Miller	FA3	Andy Keller	SF3	Alan Carlton
AN15	Soren Wuerth	FA4	Dave Klein	SF4	Susan Alexander
AN16	Scott Anaya	FA5	Sara Callaghan	SF5	Sarah Scanlan
AN17	Marlo Shedlock	FA6	Tonya Schlentner	SF6	Bill Gomez
AN18	Jay Stange	FA7	Jeff Cook	SF7	Ed Wayburn
AN19	Frank Dillon	FA8	Daniel Simien	SF8	Chris Franklin
AN20	Jerry McCutheon	FA9	Jim Plaquet	SF9	Mike Joyce
AN21	Karen Cowart	FA10	Mike Joyce	SF10	Aaron Mitchell
AN22	Terry Burrell	FA11	Linda Benson	SF11	Paul Rauber
AN23	Karen Jettman	FA12	James Young	SF12	Amy Marsh
AN24	Jed Whittaker	FA13	Richard Chapell	SF13	Fred Berdall
AN25	John Schoen	FA14	Howard Thies	SF14	Vicky Hoover
AN26	Todd Liebl	FA15	Richard Gaul	SF15	Norbert Riedy
AN27	David Cline	FA16	Steve Fortelny	SF16	Joe B. Mathis
AN28	Bob Bell	FA17	Steve Springer	SF17	Pat Davison
AN29	Terry Cummings	FA18	Roger Burggraf	SF18	Ken Freeman
AN30	Wayne Hall	FA19	Fred Heflinger	SF19	Arthur Freyer
AN31	Marilyn Houser	FA20	Dave DuHart	SF20	Laura McGourty
AN32	Janeen Herr	FA21	Dave Miller	SF21	Julie Edlund
AN33	Sally Schullinger	FA22	C.W. Mahlen	SF22	Jana Harcharek
AN34	Pat Lavin	FA23	Joe Thomas	SF23	Lisa Jean

SF24	Sara Clusen	WA8	Alma Bodfish	DC22	Paul Fuhs
SF25	Barbara Spolter	WA9	Winfred Ahvakana	DC23	Philip Radford
SF26	Kassia Siegel		**Washington, D.C.**	DC24	Sims Weymuller
SF27	Ron Felzer	DC1	John Katz	DC25	Saraj Rocjardspm
SF28	Brent Plater	DC2	Richard Glenn	DC26	Delphine Renard
SF29	Johanna Wald	DC3	Michael McClosky	DC27	Tom Uniack
SF30	Dan Ritzman	DC4	Bill Reffalt	DC28	Kathy Anderson
SF31	Marilyn Heiman	DC5	Adam Kolton	DC29	Gretchen Cook
SF32	Lonner Holden	DC6	William Sladen	DC30	Beth Myers
SF33	John Rogers	DC7	Michael Francis	DC31	Peg Sewall
SF34	Stephen Brown	DC8	Martin Thomas	DC32	Jen Block
SF35	Dennis Kelso	DC9	Michael Carroll	DC33	Melyssa Watson
SF36	Peter Schurman	DC10	Joe Kirchner	DC34	Esther Duke
SF37	Rafael Flores, Jr.	DC11	Jeremy Scheaffer	DC35	Jeanne Reitz
SF38	Suzanne Olyarnik	DC12	Evan Hirsche	DC36	Susheela Varky
SF39	Rafael Flores, Jr.	DC13	Christine Hansen	DC37	Miles Parker
	Walnwright	DC14	Heather Zichal	DC38	Philip Burgess
WA1	Mayor Lydia Agnassagga	DC15	Jennifer Lyons	DC39	Trevor Putbrase
WA2	Arnold Brower	DC16	Tom Price	DC40	Mark Anderson
WA3	June Childress	DC17	Ann Riley	DC41	Preston Motes
WA4	Rossman Peetook	DC18	Kelly O'Will	DC42	Carolyn Craig
WA5	Noah K. Phillips	DC19	John McComb	DC43	Daniel Roach
WA6	Terry Tagarook	DC20	Mike Joyce	DC44	Ben McMullan
WA7	Marjorie Angashuk	DC21	Kim Delfino		

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